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- DHL Customer Solutions & Innovation

Powering the future of Auto-Mobility Logistics



AUTO-MOBILITY

As part of a fast changing world

Sustainable Development



Continued Globalization



Digitalization



Product Innovation

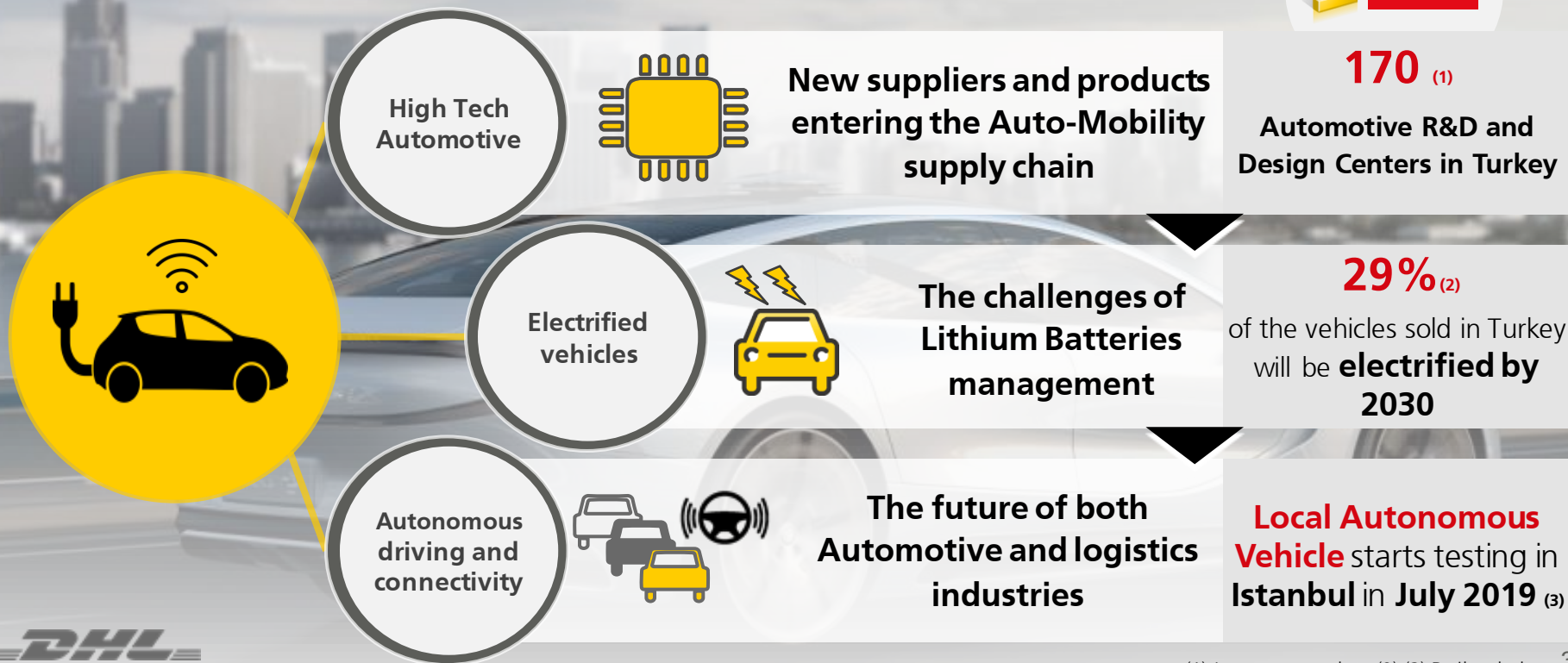
Process Optimization



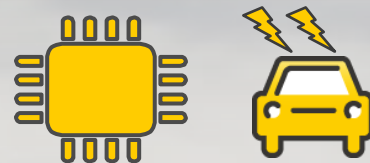
Business Models evolutions

PRODUCT INNOVATION

Requires adapted Logistics solutions & set-ups



BATTERY LOGISTICS

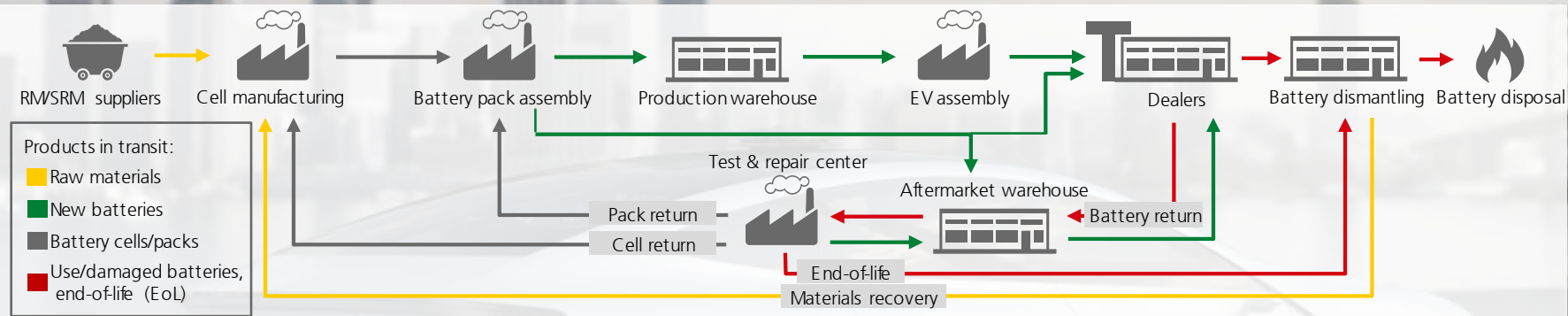


The challenge of Lithium batteries management

1 Battery Cell/Pack Manufacturing

2 EV Manufacturing & Aftersales

3 Battery End-of-Life



Sourcing Challenge

More than
75%

Battery cells produced
in **China and Korea**



Product characteristics



Complex and
**Inconsistent
Regulations**



Heavy

More than 300kg



High value

Up to 50+% of an EV price

Societal challenges



Finite resources
require **recycling**
(e.g. Cobalt)

DHL & FORMULA-E

Leveraging real life experience to develop innovative solutions



Lithium Battery Packaging development



manometer



smoke trigger



earthing



crane eyes
(4pcs)

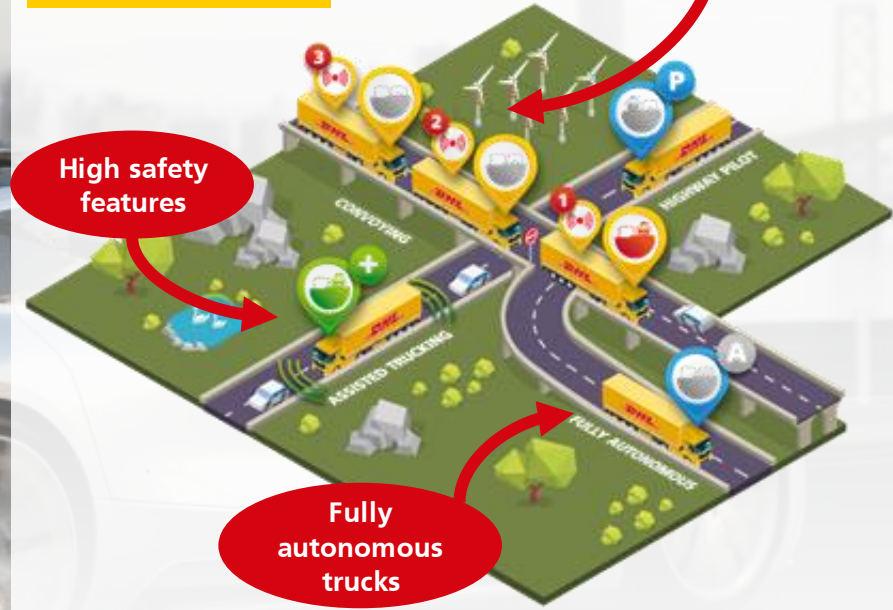
AUTONOMOUS DRIVING

Bringing efficiencies to Logistics operations

Indoor



Outdoor



PROCESSES OPTIMIZATION

Benefits both automotives companies and logistics providers



Turkey's **Vehicle Exports** grew at **16% CAGR** from 2001-2017 ⁽¹⁾

\$2-\$3 billion annual investment to integrate **industry 4.0 solutions** into the manufacturing process ⁽²⁾

Government aim: produce **30%** of the country's electricity demand from **renewable energy sources** ⁽³⁾

END TO END VISIBILITY

Benefits both automotive companies and logistics providers



RESILIENCE360



END TO END VISIBILITY

Benefits both automotive companies and logistics providers



CONNECTED INBOUND SOLUTIONS



Enabling lean & Just in time assembly strategies

OF THINGS



A potential **line stoppage** is **Identified** due to **low inventory** level



Info transmitted to ERP and yard management system for **re-prioritization**



Thanks **to NB-IOT sensors**, available **docks** are identified in **real time**



Driver receives **unloading Info update** in real time on an **app**



Line Stoppage avoided and driver **waiting time halved** on average

BURN LESS, BURN CLEAN

Multiple transport technologies support emission reduction



The StreetScooter WORK XL

100%

Electric delivery
van

20,000

Units production
capacity as of 2018

BURN LESS, BURN CLEAN

TraiLar – Mobile Solar Transport Solutions



~ 4.5 t CO₂
reduction p.a. per
vehicle

TRAILAR

*DHL Solar Panel
fitted trailer for
energy efficiency*



TRAILAR Solution

ROI 12-18 Months



Sustainable Solar – reduction in **material consumption**



Significant Reductions – over **8000 tons CO₂** less per **2000 vehicles** and **~5% Fuel Saving**

HOW DOES IT WORK?

- Apply **ultra-thin solar matting** to the vehicle roof
- **Connect the matting** to a **charger controller** which **interfaces** with the **vehicle battery** and **alternator**



~700
deployments
around
the world

BUSINESS MODELS EVOLUTION

Drives logistics adaptation on the last mile



Customer
centric
aftersales
services



Get closer to the demand
to offer higher service
levels

3.8 bn €
Total aftermarket
volume **~70 %** owned
by **independants**

E-commerce



Serve anyone,
anywhere,
anytime

eCommerce revenue
expected to grow to
\$9.67 billion
by 2021

Mobility as
a Service &
fleets



Ensure availability and
convenience of MaaS and
fleet offerings

Uber will acquire
Careem's businesses
across the **greater
Middle East region**

OMNI CHANNEL AFTERSALES



Shared & high service level set ups for traditional & online channels

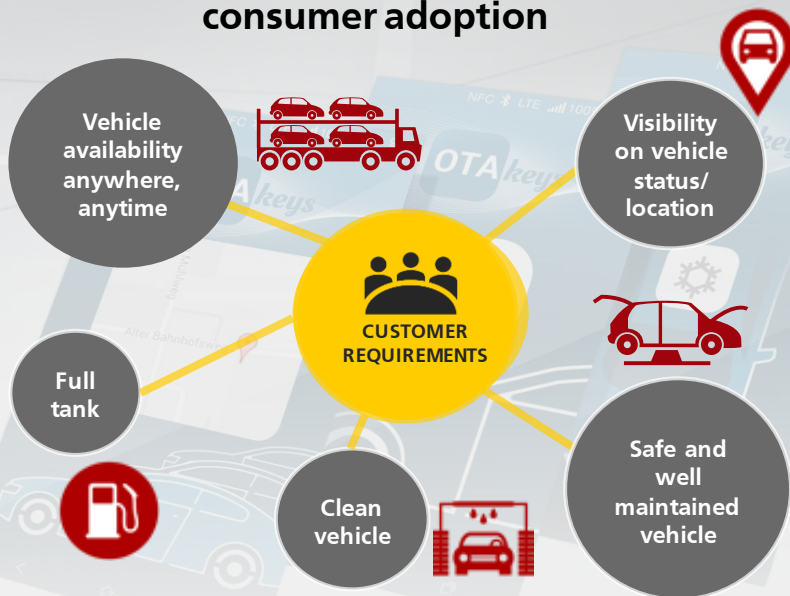


MOBILITY AS A SERVICE AND FLEETS

New usages create new logistics requirements



Convenience is the key driver for consumer adoption



INSIDETRACK



New consumer expectations translate into new logistics challenges

**“Nothing remains
constant except
change itself.”**

Heraclitus