



DRIVING TOWARDS THE AUTOMOTIVE 4.0: OPPORTUNITIES AND CHALLENGES



FATHI TLATLI

PRESIDENT, AUTO-MOBILITY SECTOR
DHL CUSTOMER SOLUTIONS & INNOVATION



#DHL_AutoEvent

AUTO-MOBILITY

As part of a fast changing world

Sustainable Development



Continued Globalization



Digitalization



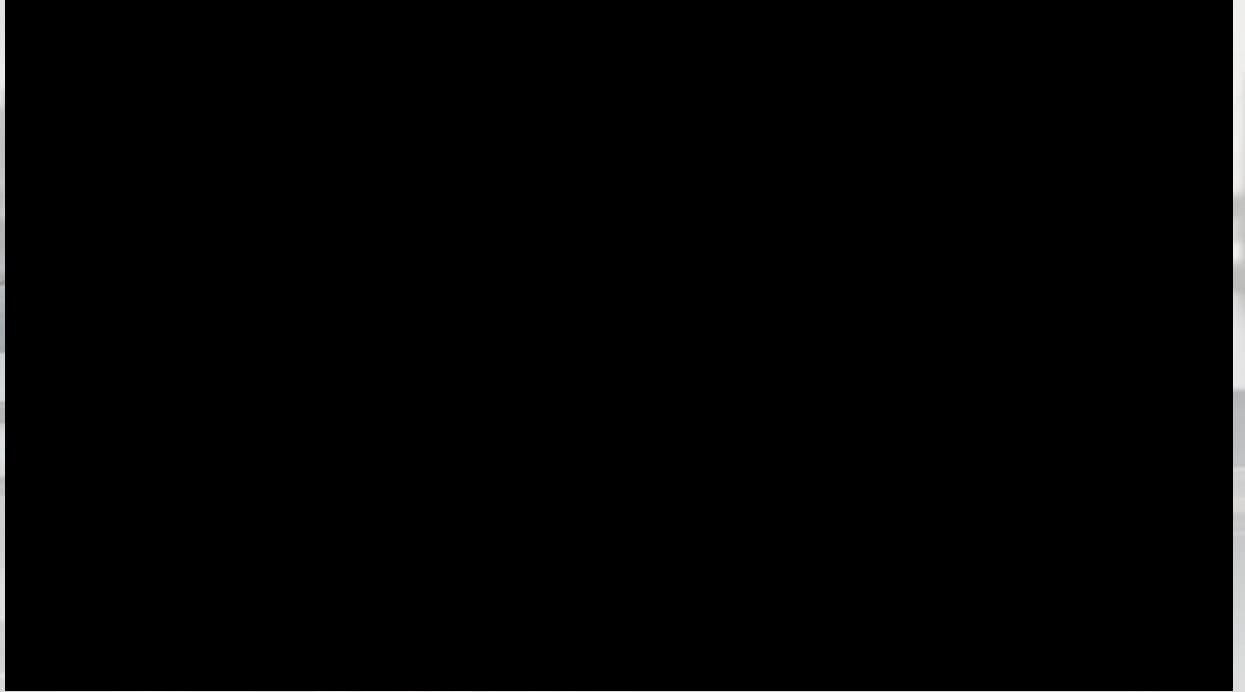
Product Innovation

Process Optimization



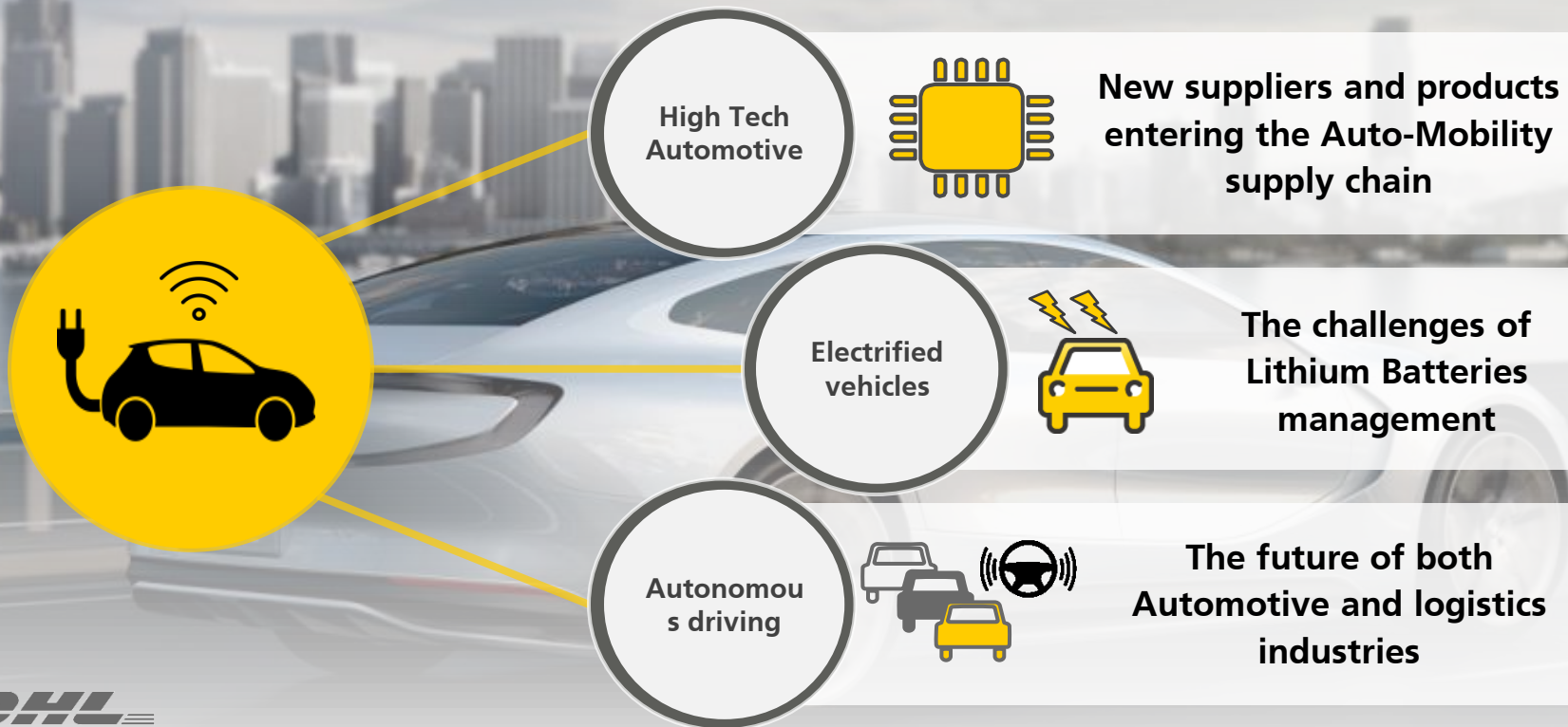
Business Models evolutions

PRODUCT INNOVATION

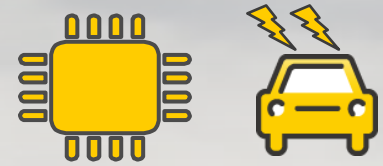


PRODUCT INNOVATION

Requires adapted Logistics solutions & set-ups



BATTERY LOGISTICS

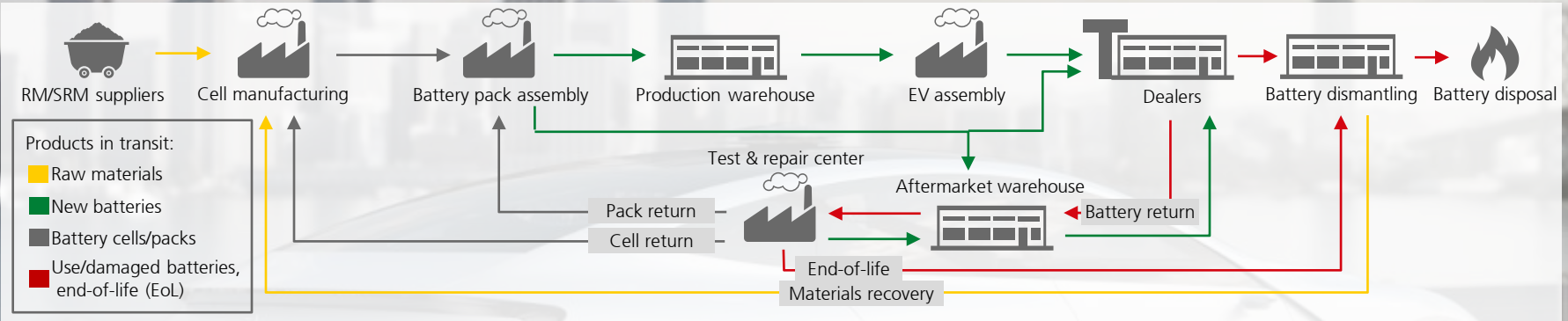


The challenge of Lithium batteries management

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)

AUTONOMOUS DRIVING

Bring efficiencies to Logistics operations

Indoor



Automated Guided Vehicles

- Product/Parcel Transport
- Pallet Transport
- Container Transport

Mobile Picking Robots

- Mobile Piece Picking
- Mobile Case/Box Picking

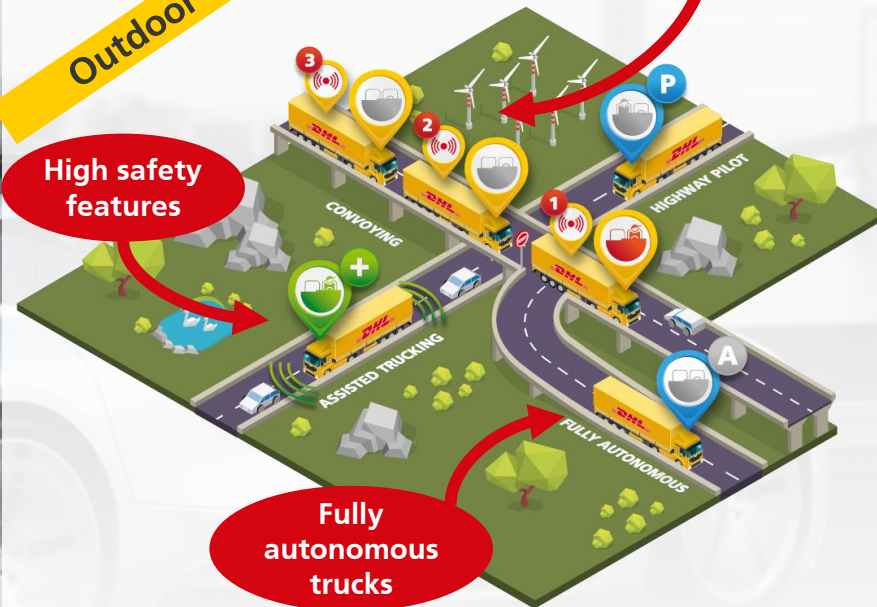
Mobile Robots with special purpose

- Cleaning Robots
- Surveillance Robots
- Inventory Robots/Drones

Stationary Picking Robots

- Stationary Piece Picking
- Stationary Case/Box Picking

Outdoor



PROCESSES OPTIMIZATION

Benefits both automotives companies and logistics providers



End-to End
Visibility



Leverage technology to
gain insights and improve
reactivity

Connected
inbound
solutions



Enabling lean & Just
in time assembly
strategies

Burn less,
burn clean



Reduce environmental
footprint through clean
transport and waste reduction

END TO END VISIBILITY



Benefits both automotive companies and logistics providers

RESILIENCE360



BLOCKCHAIN Logistics



Supply Chain
Visibility



Risk & Incident
Monitoring



Risk & Impact
Assessment



Smart Contracts
& Compliance



Counterfeiting
protection



A.I. & Machine
learning

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

TRAILAR

*DHL Solar Panel
fitted trailer for
energy efficiency*



TRAILAR

A first of its kind TRAILAR utilizes cutting-edge solar technology to capture a natural energy source, providing a greener, cleaner, urban-friendly delivery solution.



BUSINESS MODELS EVOLUTION

Drives logistics adaptation on the last mile

Customer
centric
aftersales
services



Get closer to the demand
to offer higher service
levels

Omni
Channel
aftersales



Serve anyone,
anywhere,
anytime

Mobility as
a Service &
fleets



Ensure availability and
convenience of MaaS and
fleet offerings

OMNI CHANNEL AFTERSALES



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



OMNI CHANNEL AFTERSALES



More flexibility and mobility, closer to the customers



IN-CAR DELIVERY

- More **mobility** and **flexibility**
- **Convenience** to the customer



AUTONOMOUS VEHICLE

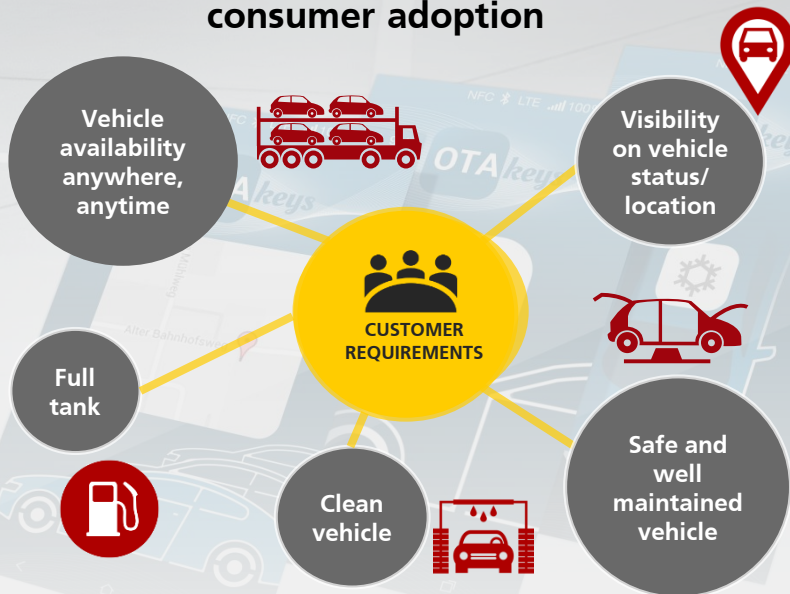
- Increase **Productivity** of delivery personnel

MOBILITY AS A SERVICE AND FLEETS

New usages create new logistics requirements



Convenience is the key driver for consumer adoption



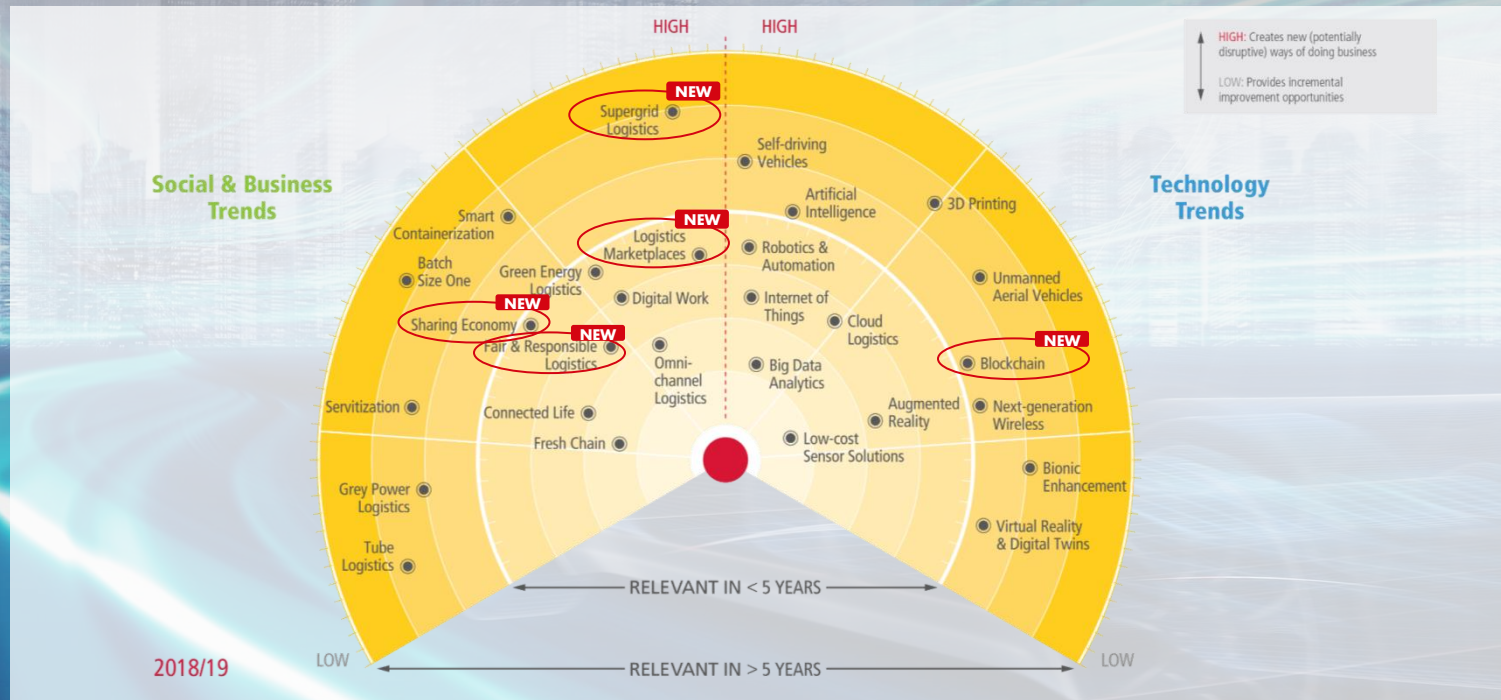
INSIDETRACK



New consumer expectations translate into new logistics challenges

STAYING AHEAD OF THE INNOVATION CURVE

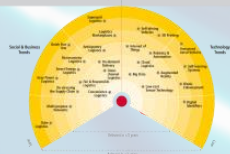
The DHL Trend Radar



A PHASED & COLLABORATIVE APPROACH

To identify relevant use cases jointly with our customers

1 TREND RADAR



2 TREND REPORT



3 INNOVATION CENTER



4 PROOF OF CONCEPT



COMMERCIALIZATION



INITIATE GLOBAL ACCELERATORS



FOSTERING AN INNOVATIVE MINDSET

Leveraging ideas from inside & outside



Plug & Play Partnership

- Partner of 2 programs in **Supply Chain and Mobility** (Startup Autobahn)
- Funelling **external ideas** from both **automotive** and **logistics** industries



Start-up Lab

- **Internal startup** incubator program
- Aims at financing, providing resources and **supporting innovative ideas**

“A stable 21st century society requires 21st century solutions not 20th century economics.”

Phil Harding

Chairman of Saltford Environment Group