

# AI IN & FOR LOGISTICS INSIGHTS FROM THE LOGISTICS TREND RADAR



*Dr. Klaus Dohrmann*

Vice President  
Global Head of Innovation &  
Trend Research

DHL CSI – Excellence. Simply delivered.

Future

“

All **models** are wrong  
but some are **useful!**

”



George E. P. Box (1919-2013)  
British statistician  
"one of the great statistical minds of the 20th century"

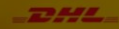


# WHAT WE BELIEVE IN...

## DIGITALIZATION WORKSHOP

DISCOVER, CONCEPTING & PRODUCTION

DHL – Excellence. Simply delivered.



Close to  
**CUSTOMERS**

Close to  
**TECHNOLOGY**

Close to  
**OPERATIONS**

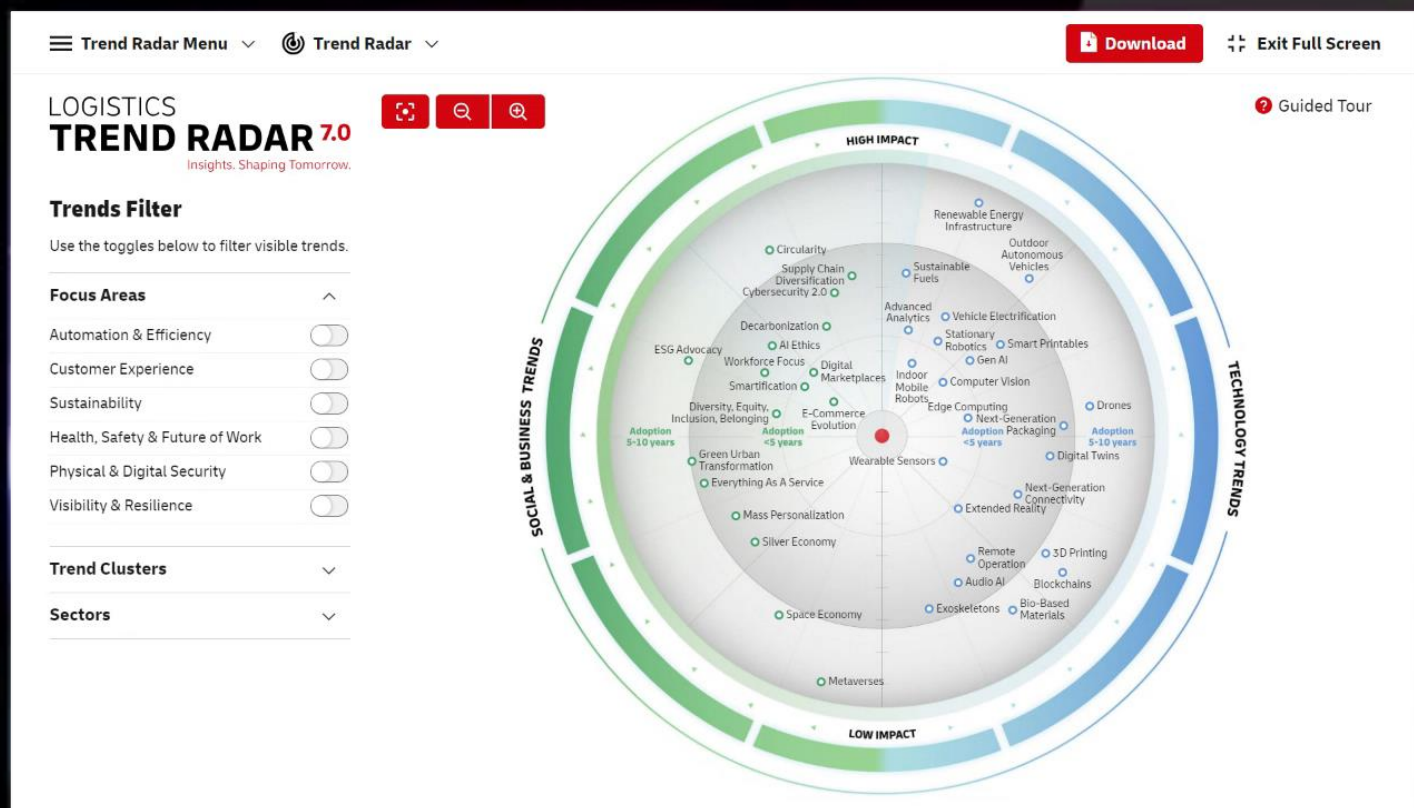
DHL  
INNOVATION  
CENTER



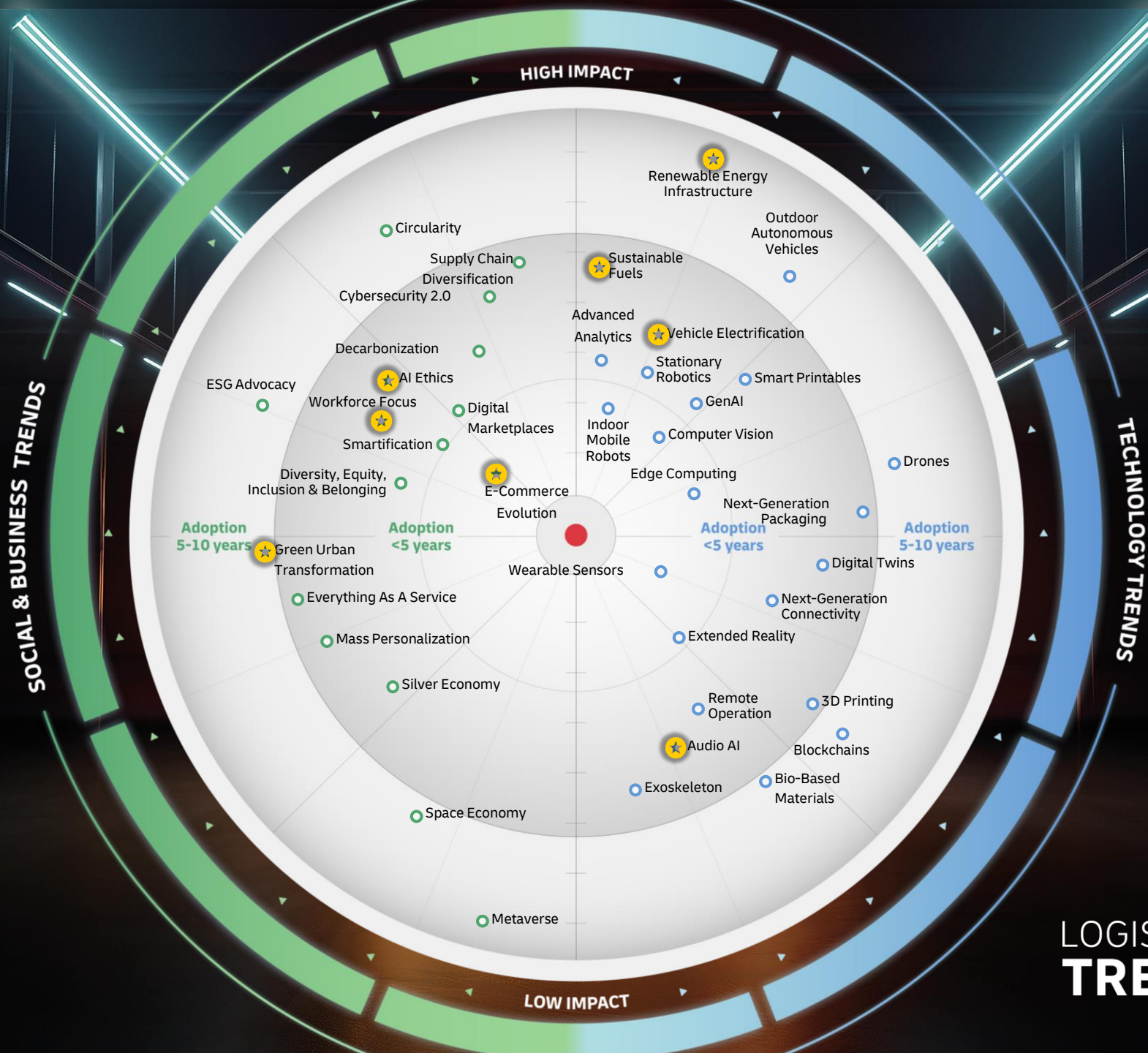
**DHL Innovation Ecosystem**

# A DECADE'S WORTH OF INNOVATION INSIGHTS









### Removed Trends

Physical Internet

Quick Commerce

Omnichannel

Sharing Economy

Cloud & APIs

Quantum Computing

Tube Systems

### New Trends



# AI & SUSTAINABILITY IN FOCUS

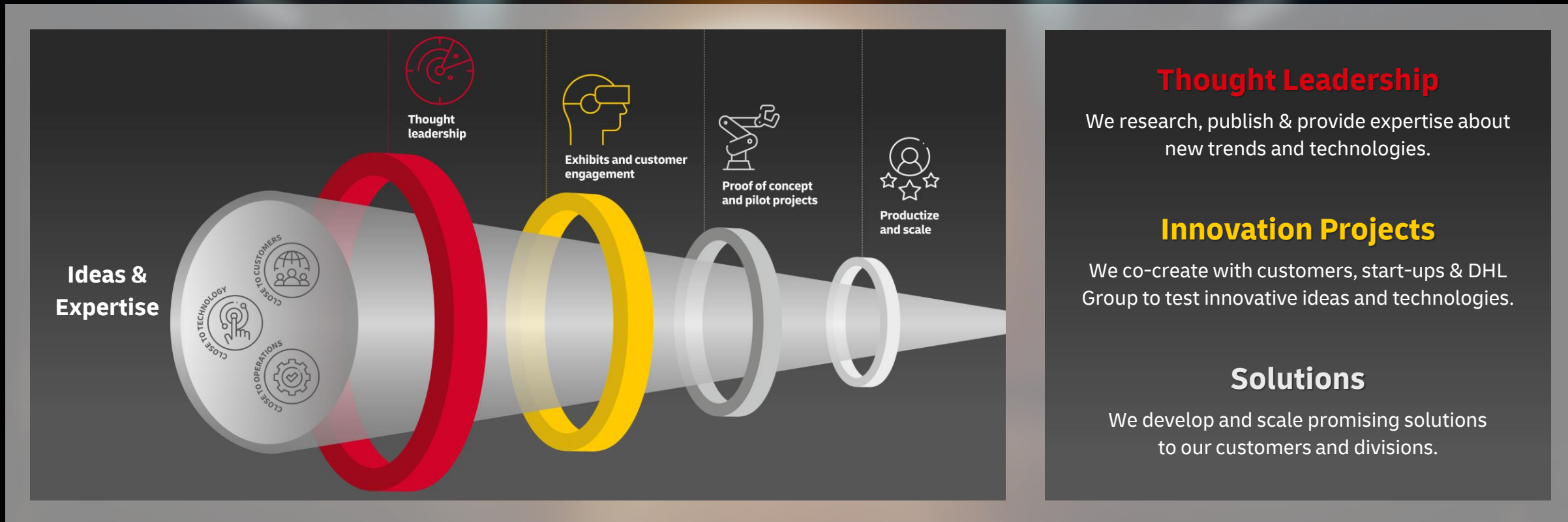


**Sustainability**



**Artificial Intelligence**

# OUR INNOVATION FUNNEL DRIVES INNOVATION FROM THEORY TO PRACTICE





# ARTIFICIAL INTELLIGENCE FOR LOGISTICS

## DATA, DATA, DATA

**ACQUIRE**



**GENERATE**



**ANALYZE**



# AI HAS LEFT THE SCREEN IN LOGISTICS!

## AI Analytics

- Route optimization
- Process efficiency
- Inventory optimization
- ...



## Audio AI

- Predictive maintenance
- Driver drowsiness detection
- ...



## AI Ethics

Addressing the ethical considerations and implications of AI and ensuring their responsible development and deployment



## Computer Vision AI

- Inventory identification & counting
- Dimensioning
- Load-fill assessment
- Health & safety (operations, drivers)



## Generative AI

- Customer service
- Backoffice tasks (e.g. legal, finance)
- ...

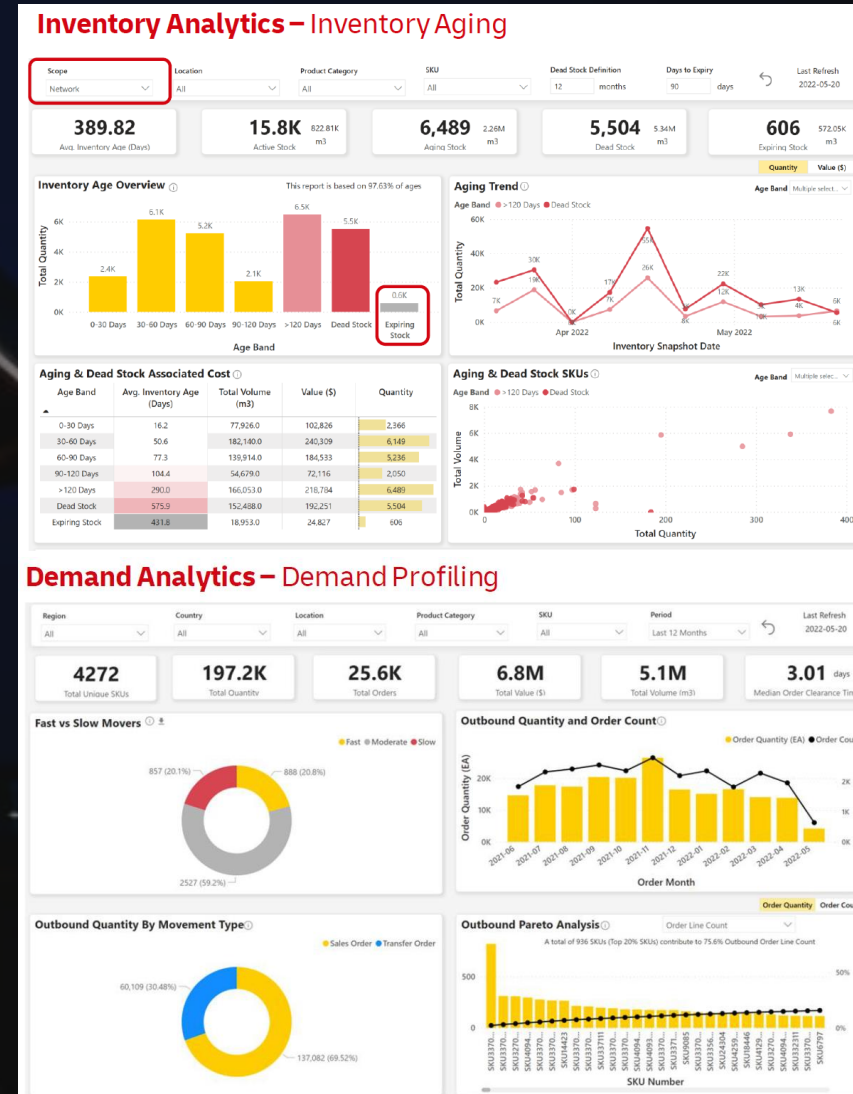


# AI Analytics



## AI-enabled DHL Supply Chain Optimization & Analysis Recommendations Platform (SOAR)

- Modular, standardized supply chain analytics platform to help our customers **optimize** their supply chain network
- **Data-driven assessment** of e.g. inventory aging, dead stock simulation, inventory profiling, SKU placement
- **Visibility** on returns, demand forecast and anomalies
- **Improved transparency**, avoid lost sales, reduced working capital, and storage cost, increased productivity, better resource planning

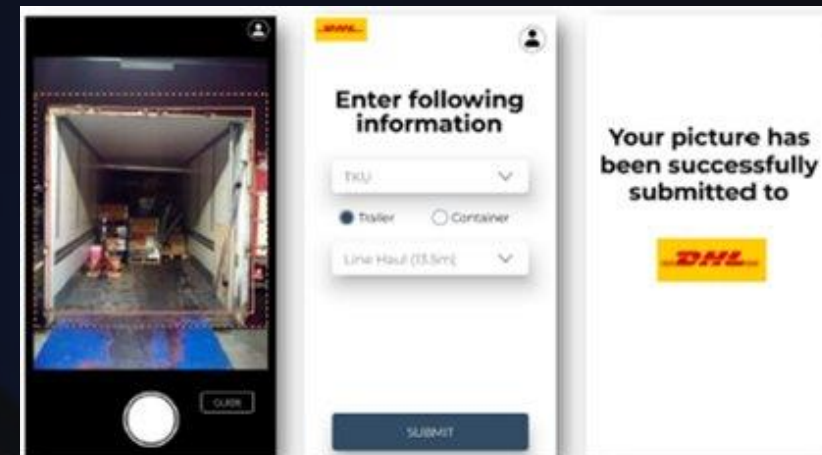




# COMPUTER VISION

## AI-assisted Load-Fill Assessment

- Analyze a picture of a loaded container taken via a mobile app to determine **volumetric load fill**
- Opportunity to undertake root cause analysis and mitigate
- **Reduce CO2 footprint**, by improving trailer fill & reducing the number of unnecessary trucks on the road
- Sufficient accuracy today depending on picture quality & visibility





# COMPUTER VISION

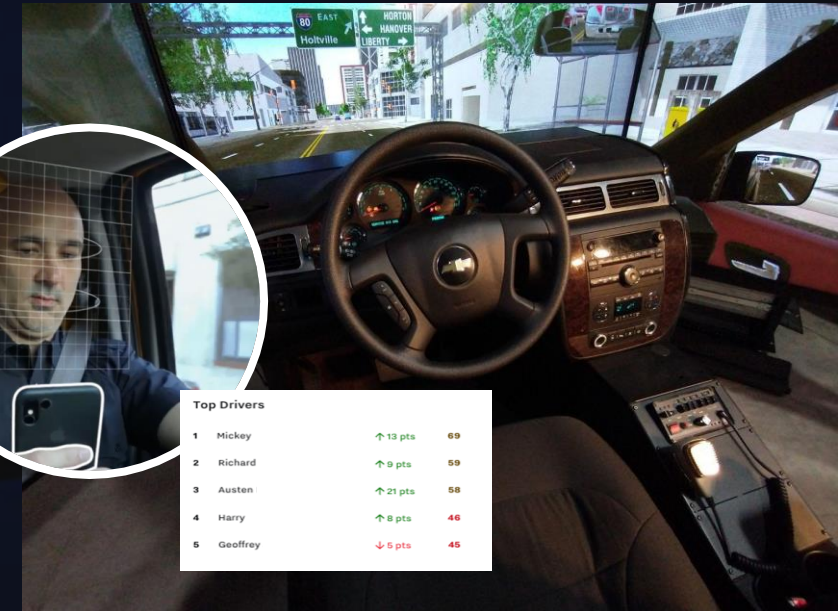
## Artificial Intelligence Driver Safety, Sustainability & Efficiency

- Integrating vehicle data from dash cams, telematics, compliance, trip management, trailer tracking, and speed monitoring
- **Safety:** address unsafe driving behavior with more effective coaching
- **Efficiency:** diagnostic data, real-time alerts, and automated maintenance workflows
- **Sustainability:** decrease unnecessary fuel use through real-time visibility into driver behavior and insights into route performance

- ✓ 65% decrease in harsh driving incidents
- ✓ 26% reduction in accidents
- ✓ 49% reduction in accident-related costs
- ✓ 50% decrease in severe and heavy speeding
- ✓ 50% decrease in mobile usage
- ✓ 50% decrease in driver turnover



Top Drivers		
1 Mickey	↑ 13 pts	69
2 Richard	↑ 9 pts	59
3 Austen	↑ 21 pts	58
4 Harry	↑ 8 pts	46
5 Geoffrey	↓ 5 pts	45

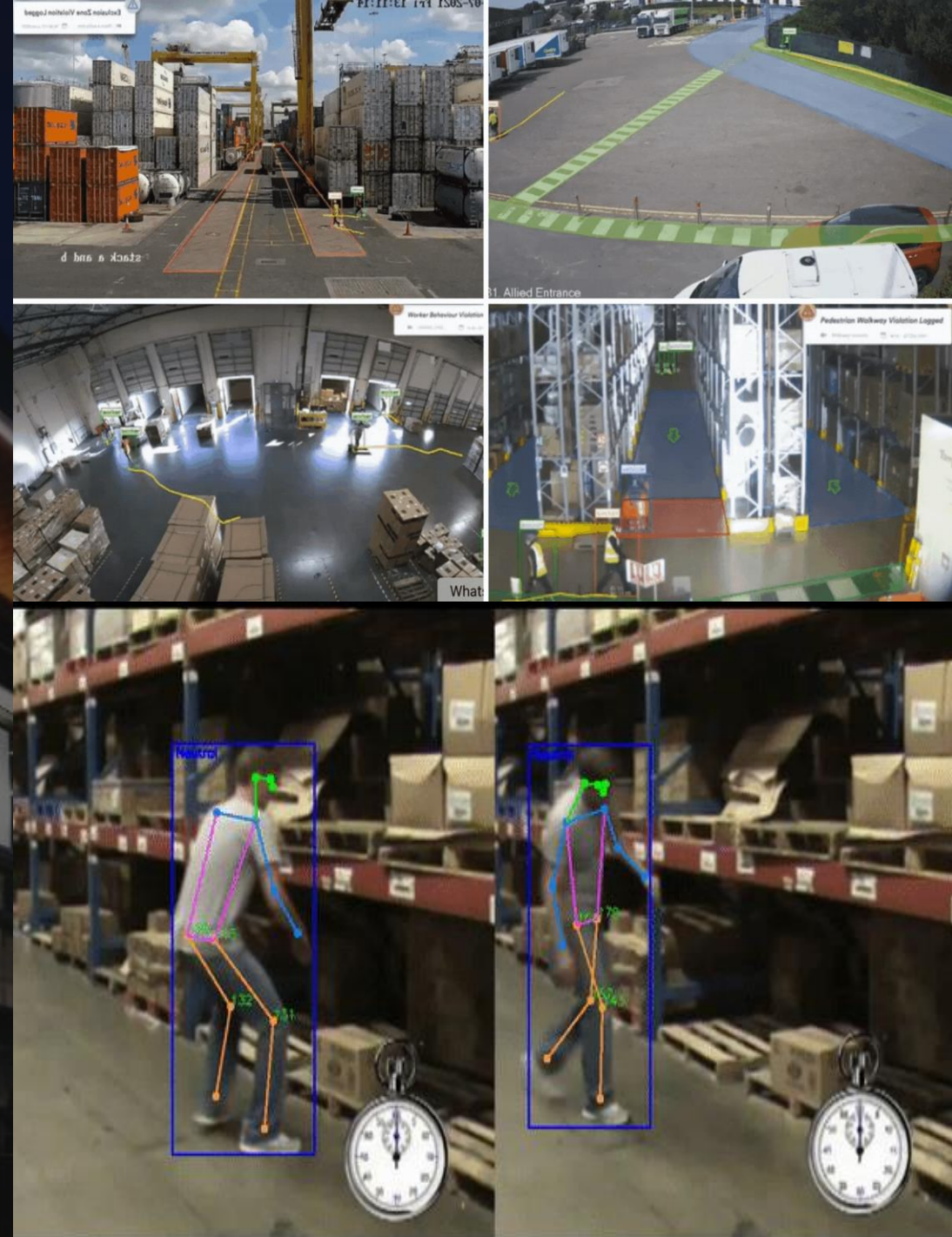




# COMPUTER VISION

## AI-enhanced Safety in the Workplace

- Build **safety rules** and define the parameters around it
- Video data to rapidly identify **anomalous events**
- **Analytics** to capture evidence for transparency, improvement, and training
- **Dashboard** output enables Health & Safety management to make data-driven decisions





# AUDIO AI



New Tool for  
Preventive Maintenance for Conveyor Systems



TinMan Systems

## Mobile Conveyor Inspection System

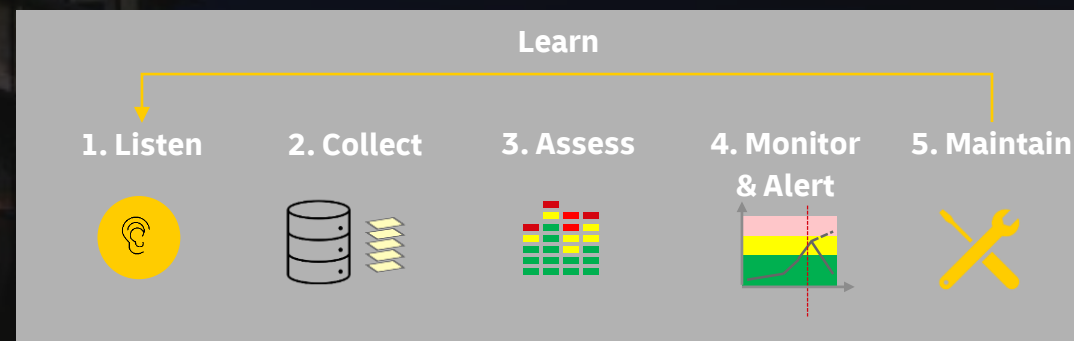
- now with Smart 3-Way Lighting



Systems Available Now  
More Info at End of Video

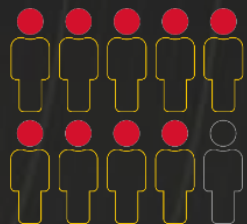
## AI-optimized Predictive Maintenance

- **Prediction** of mechanical failure-based sorter outages
- AI-enabled **noise sensors** identified to provide best correlation to maintenance needs
- Objectives: increase asset **availability & reduce maintenance efforts**



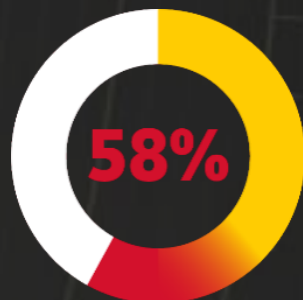
# LOGISTICS IS A PEOPLE BUSINESS

## DHL Future of Work Trend Report



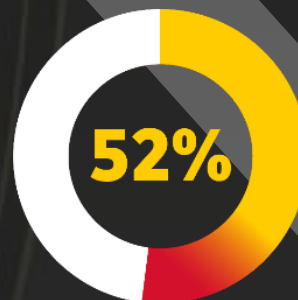
**9 in 10**

... believe technology has been helpful  
to their role the past 5 years



Operations

... believe new technological advancements  
are a threat to their job and career



Office



Leaders should **utilize the workforce's enthusiasm and readiness to learn new skills** to collaboratively transform and shape a Future of Work together.



**Investment in human capital and workplace culture must come first**, superseding efforts to create modern work environments.



Fulfilling the workforce's **varying expectations must be carefully and thoroughly considered.**



**Future of Work  
in Logistics**

DHL Trend Report – 2021

Future

“ **Competition** is becoming less  
between individual companies, and  
more **between the supply chains**  
they are part of. ”



*Prof. Richard Wilding  
Emeritus Professor of Supply Chain Strategy  
Cranfield School of Management*



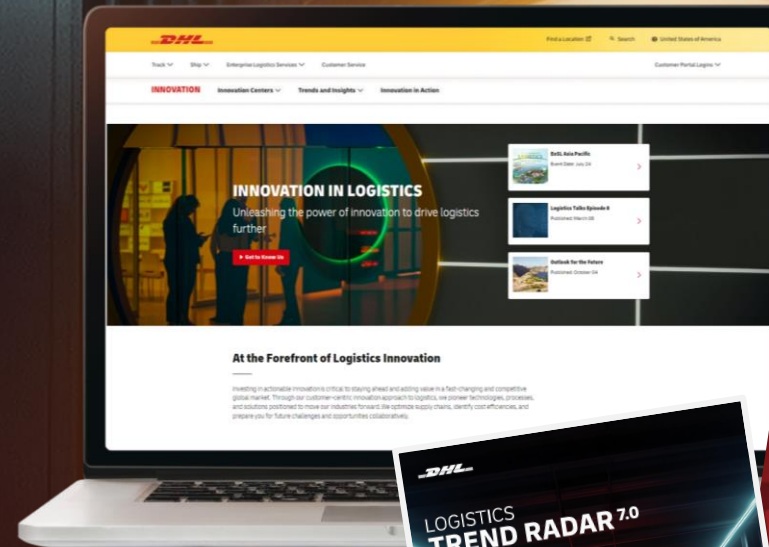
# THANK YOU!

For more:

[www.dhl.com/innovation](https://www.dhl.com/innovation)

- Thought Leadership Publications
- Innovation Newsletters
- Use Cases
- Access to DHL Innovation Centers

DHL  
INNOVATION  
CENTER



Explore Now!

