DATA & SUPPLY CHAINS OF THE FUTURE



HPCLC FALL 2022

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DHL Customer Solutions & Innovation

SUPPLY CHAIN IMPORTANCE IN THE NEW NORMAL

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SUPPLY CHAIN

Coronavirus Is a Wake-Up Call for Supply Chain Management

OPERATIONS MANAGEMENT

Coronavirus Is Proving We Need More Resilient Supply Chains

Dec 8, 2021, 09:20am EST | 3,304 views

Supply Chain Management As A Strategic Differentiator

139 views | May 18, 2020, 10:08am EDT

Key Digital Supply Chain Moves Will Create New Industry Leaders Post-Covid-19

PwC: Automation is key to supply chain agility post pandemic

"In the new normal, if your supply chain is the same as the one that you had pre-coronavirus, you're probably doing something wrong."

Richard Wilding
Professor of Supply Chain Strategy, Cranfield School of Management



THE NEW NORMAL: SUPPLY CHAIN FOCUS

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- Supply chains will have to be **re-shaped – a portfolio of purposes**
- Supply chains will have to be re-assessed, including **transportation flows and warehouse networks**
- **Supply chain innovation** will be essential
- **Collaboration** along the value chain is the enabler
- **Leadership responsibility** is need and demand for new, technology-enabled ways of working



Supply chain transformation from a cost driver to a VALUE driver


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ATTRIBUTES DEFINING
SUPPLY CHAINS OF THE FUTURE


DHL
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AUTOMATED


DHL
INNOVATION
CENTER
CONNECTED

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SUSTAINABLE


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CUSTOMER-CENTRIC



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"You can do everything, but you cannot do everything!"

SHAPING SUPPLY CHAINS OF THE FUTURE

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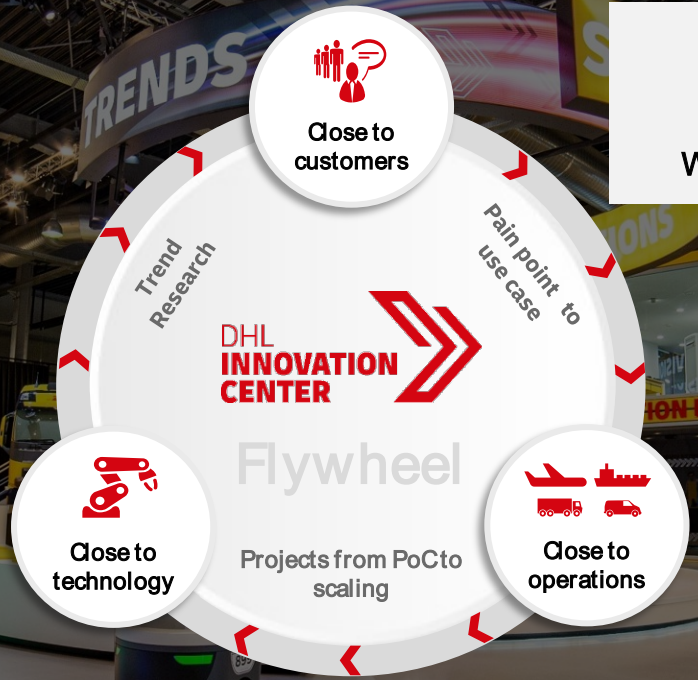
20,000+
Visitors p.a.
5,000+
Workshops since 2015



100+
Start-ups engaged per annum, 1000's tracked annually

150+
Sites
1000+
DHL people involved

400+ Projects since 2018 **100+** projects p.a.
50% Success rate of projects completed

DELIVERING VALUE THROUGH TRUE INNOVATION

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Europe Innovation Center

- Established **2007**
- **3 virtual studios**



Americas Innovation Center

- Established **2019**
- **Virtual studio**





Middle-East, Africa Innovation Center

- Established **2021**
- **Virtual studio**



Asia-Pacific Innovation Center

- Established **2015**
- **Virtual studio**

DHL Trend Research Innovation Funnel



THE DHL LOGISTICS TREND RADAR

High Impact:
revolutionary applications that are potentially disruptive

Low Impact:
evolutionary changes with incremental improvements

Relevancy:
when a trend will become ubiquitous or commonplace in the logistics industry as a whole



THE LOGISTICS TREND RADAR

Delivering insight today, creating value tomorrow. 6.0



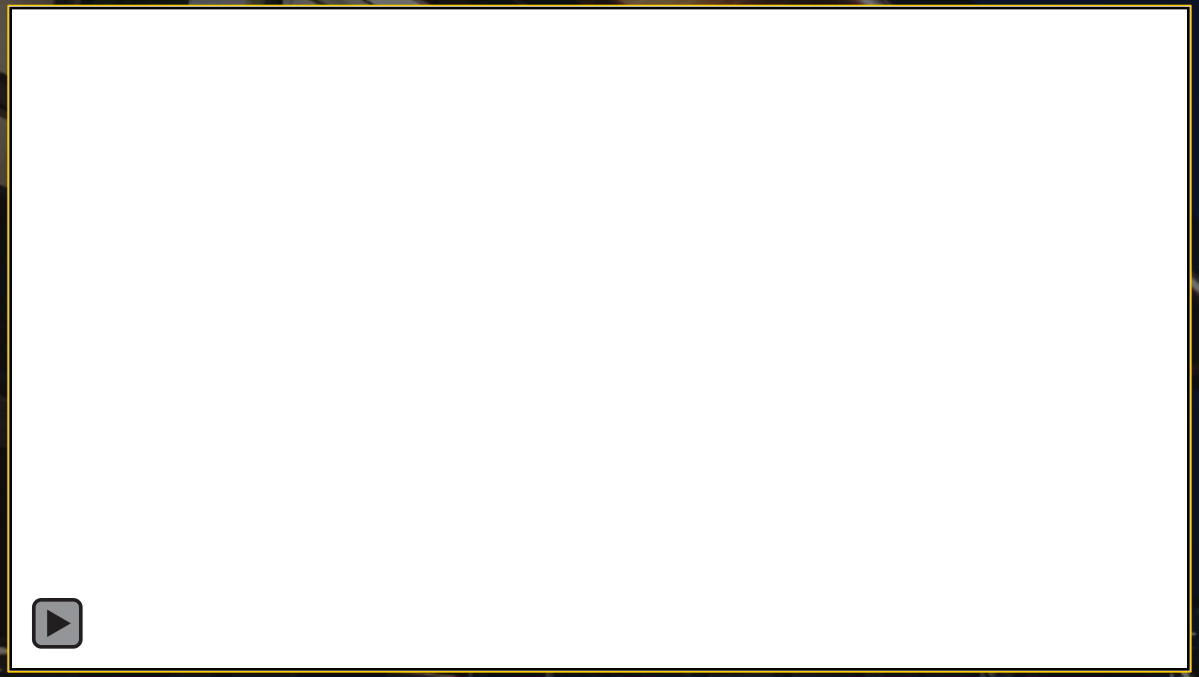
High Impact
Revolutionary applications that are potentially disruptive.

Low Impact
Evolutionary changes with incremental improvements.

Realization
The normal way of operating and doing business in the logistics industry.

AUTOMATED

Case Study AI-powered Robotic Arms



Sortation robots to increase productivity and service quality

- 1,000 small parcels per hour
- Sort 40% more packages per hour
- 99% sorting accuracy
- AI enabled

AUTOMATED

Smart glasses in warehouses

Vision Picking

- Significant efficiency increase
- Quality improvements
- Safer working environment
- Positive employee feedback
- Global roll-out

CONNECTED

IOT as enabler of digitalization and data analytics

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Smart Operations



Shipments & Assets



Last Mile & Customer Experience



CONNECTED

Case Study Visibility and shipment tracking of luxury goods

DHL EXPRESS | Luxury Fashion Brand | Middle East | Productized

- Full location visibility, track-paths, idle times
- Visibility helps to secure quality of service
- Ensures goods security and helps identify bottlenecks
- Improves overall customer experience



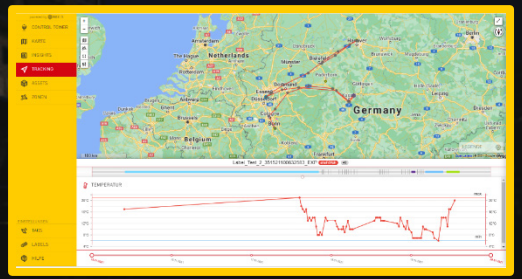
CONNECTED

Case Study SmartLabels thine active tracking device



Smart Label | Testing

- Single use
- Designed as low-cost label for large-scale deployments
- End-to-end visibility with no additional hardware required
- Small dimension – easy setup with sticky back
- Uses ultrathin, sustainability focus, flexible, zinc-based battery



DATA-DRIVEN

Case Study Warehouse Digital Twin

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DHL has been at the forefront in testing the use of IoT in its warehouses since 2015 with various partners.

6 KEY ELEMENTS OF DHL SMART WAREHOUSE INITIATIVE

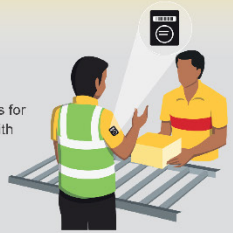
1

Minimum 16% efficiency gain with reduced congestion, improved resource planning, and workload allocation.



2

Live site access monitoring: Management alerts for controlled areas with restricted access.



3

Real time monitoring of environmental temperature systems.





4

Full traffic movement visibility for slotting optimization.



5

Real time operational data enables supervisors to make informed decisions, coach teams and ultimately improve operational team performance.



6

Enhanced MHE safety, with proximity sensors, providing enhanced spatial awareness, reducing potential collision risk.

DATA-DRIVEN

Case Study Inventory Optimization & Digital Twin

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Challenges

- **Rising costs** and **lower margins**
- Huge **amounts of available data** but no feasible means of meaningful analysis
- Lack of **end-to-end visibility** in SKU movement

Solution

- **Automated data crawling** and extraction through custom-built RPA
- New source of data made accessible for internal analysis
- Creation of a network **digital twin**
- Identified **cost saving** opportunities with statistical analysis



BUSINESS IMPACT

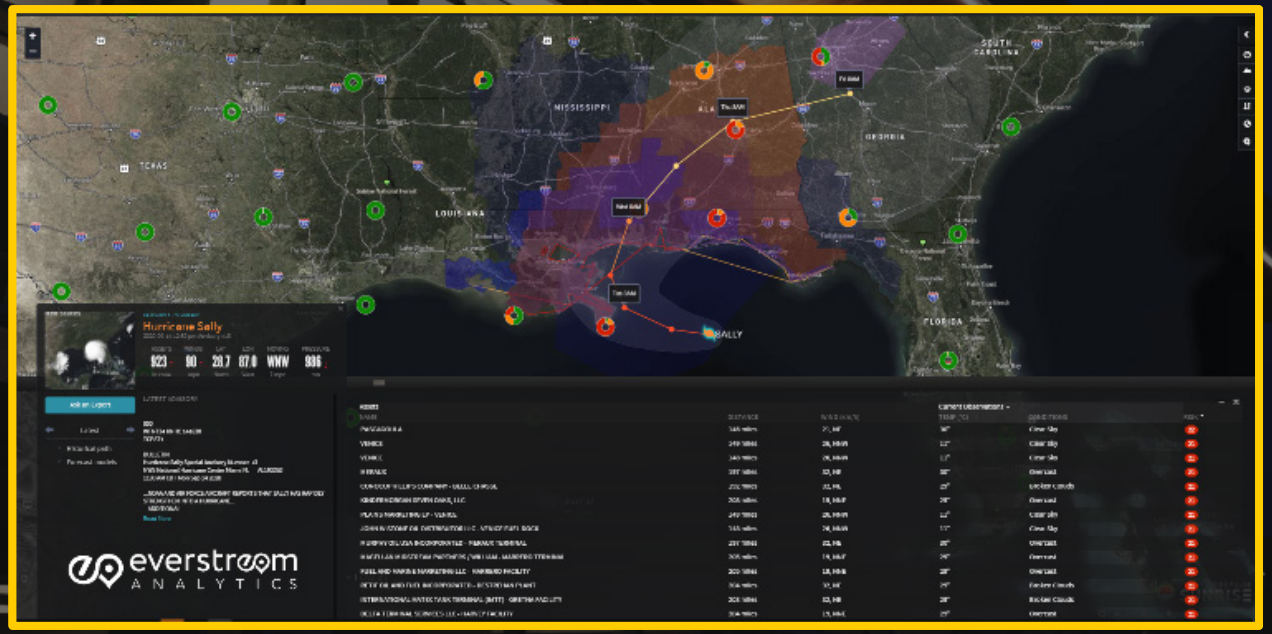
Annual Cost for a only limited part of the network

Inventory Transport & Storage optimization

Identified Fuel Saving opportunities

DATA-DRIVEN

Predictive and real-time Risk Insights



everstream ANALYTICS

Unlocking the power of unique insights across the end-to-end supply chain processes

- Maps supply chains and locations
- Builds risk profiles
- Identifies critical hot spots
- Mitigates supplier risk
- Real-time visibility of shipment status, risk, and adjusted ETA

SUSTAINABLE

Clean operations for climate protection

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>30% share of sustainable fuels in Air/Ocean Freight and Road Transport



60% e-vehicles in pick-up and delivery

All new **buildings** are **climate neutral**

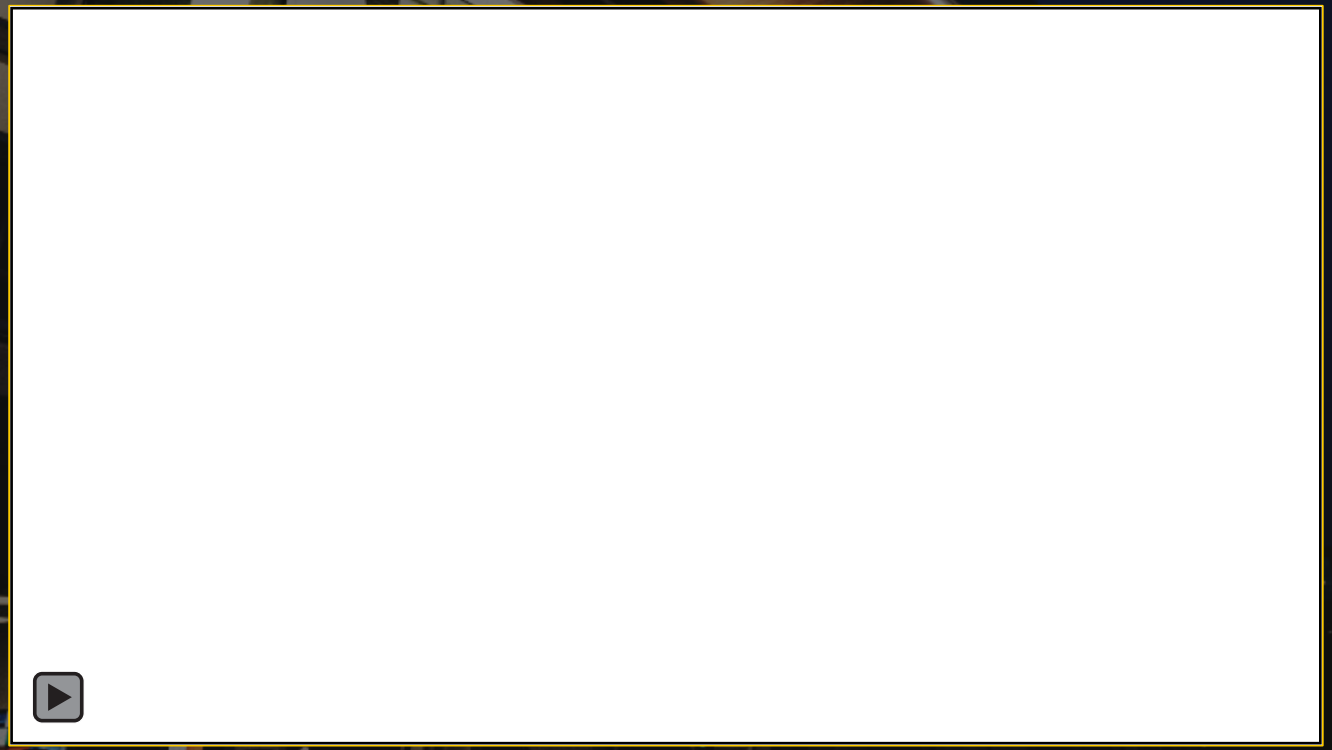


Innovation / Technology examples

- Transport decarbonization and optimization (e.g. SAF)
- Real estate energy optimization and carbon-neutral design to be used for all new buildings
- Network & inventory optimization (AI & Data Analytics)
- Packaging material & packaging optimization
- Remote site support with smart glasses

SUSTAINABLE

Express Aviation



By 2024, 12 of these state-of-the-art electric aircraft will form an unparalleled electric network of cargo planes flying for DHL Express.

LOGISTICS AS A PEOPLE BUSINESS

DHL Future of Work Trend Report

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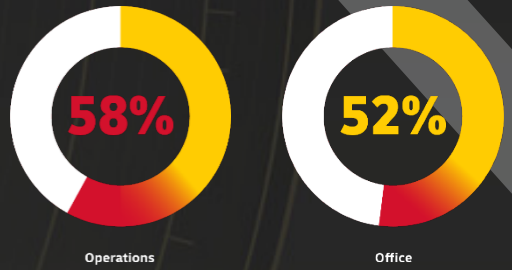
9 in 10

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

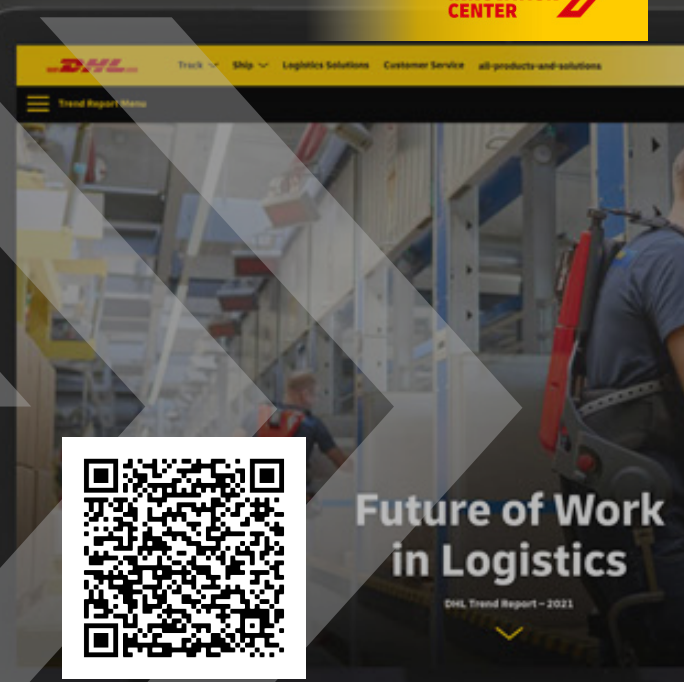


…believe new technological advancements are a threat to their job and career

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**.

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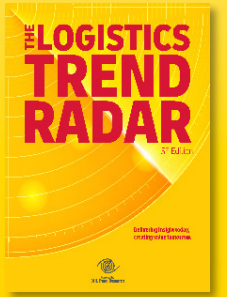
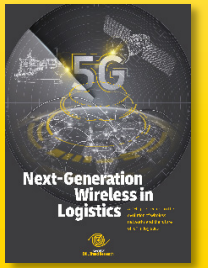
THE ERA OF
LOGISTICS
“IF YOU WANT GROWTH, INNOVATE.
IF YOU WANT EXPONENTIAL GROWTH, CONNECT.”

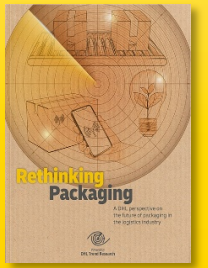
INNOVATION CENTER

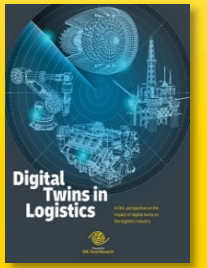
THANK YOU!

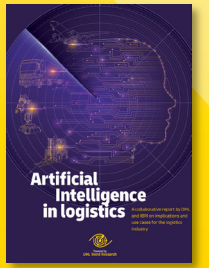
Free Download
logistics.dhl.com

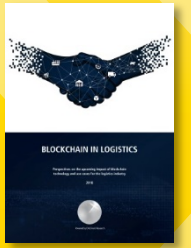






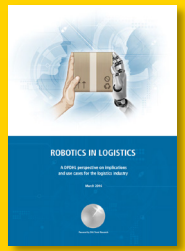




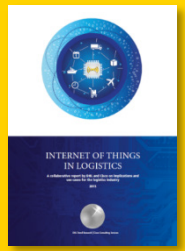






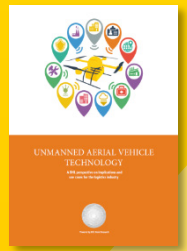


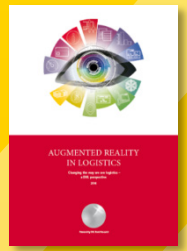


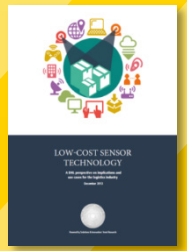


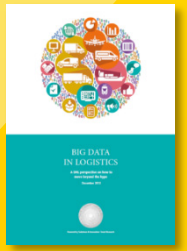












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