

A red robotic arm is shown holding a tablet. The tablet screen displays a stylized face with large blue eyes and a small black camera lens above it. The background is a bright, slightly blurred industrial setting.

A PLATFORM TO INSPIRE, CONNECT AND ENGAGE

# Looking Towards the Future

## 4<sup>th</sup> IEEE World Forum on IoT

Singapore

6<sup>th</sup> February 2018



# DHL IN A MINUTE

**EUR 59.2bn** Group Revenue

**500,000** employees in **220**  
countries & territories

**Post – eCommerce – Parcel (PeP)**  
Europe's largest postal service



Partner for e-Commerce and a pioneer  
in secure digital communications



**Deutsche Post DHL  
Group**

**Express**

No. 1 in international express delivery



**Global Forwarding, Freight**  
Leader in the forwarding business



**Supply Chain**

No. 1 in contract logistics



# Digitalization...

- ➔ is the biggest opportunity since globalization
- ➔ is not only about new technology, but also about a different mindset and culture
- ➔ changes the way we communicate, work, travel, consume, and do many other things!
- ➔ means exploring new business models, exploiting new technologies and changing company culture



The biggest future revenue and profit impact of digitalization is set to occur through the digitalization of Supply Chains

- McKinsey

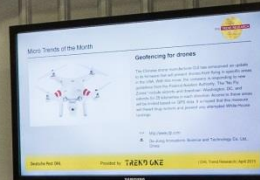


**DHL**



# DHL ASIA PACIFIC INNOVATION CENTER

EXIT



**DHL**  
EXCELLENCE SIMPLY DELIVERED

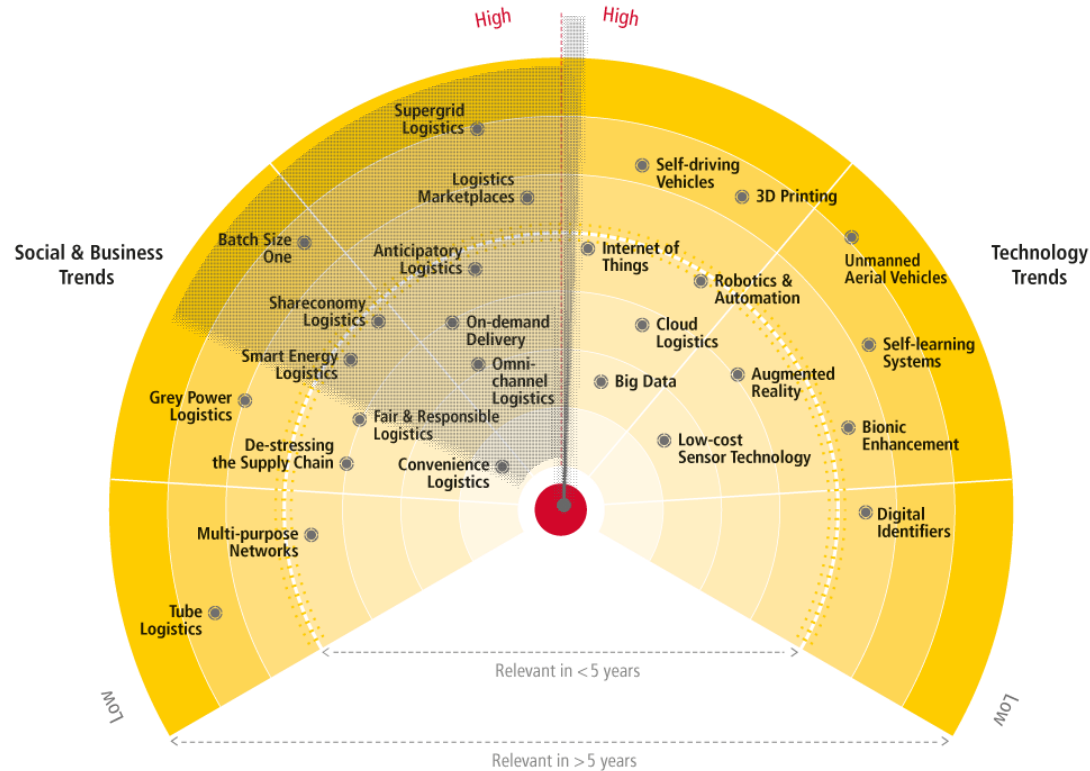
Contact Us at  
[apic@dhl.com](mailto:apic@dhl.com)

# FOUR SOURCES OF INSPIRATION



## DHL TREND RESEARCH

# DHL LOGISTICS TREND RADAR



# HOW DO WE ADD VALUE?





# TODAY'S FOCUS



# Internet of Things



# Internet of Things

## IoT in Warehousing

**Smart Inventory Management**



**Optimal Asset Utilization**



**Connected Workforce**



**Smart Energy Management**



INTERNET OF THINGS  
IN LOGISTICS

A collaborative report by DHL and other leading logistics and technology companies



© DHL Supply Chain

## IoT in Transportation

**Location & Condition Monitoring**



**Fleet & Asset Management**



**End-to-end SC Risk Management**



**Predictive Maintenance**



## IoT in Last Mile Deliveries

**Optimized Mail/Parcel collection**



**Automatic Replenishment**



**Flexible Delivery and Pick-up**



**Next-generation Visibility**





# Internet of Things

## Indoors: Smart Sensor GSM: Next generation visibility

Sensor



Web portal



- **Near Real-Time Visibility:**  
Instant global data availability  
(upload via mobile phone network [GSM])
- **Full Condition Sensing:**  
Monitors temperature and humidity,  
indicates shock and light events
- **Geo Positioning:**  
GSM geo location tracking via cell ID

- **Stand-Alone Solution:**  
Visibility without additional  
equipment (no IT)
- **Proof of delivery:**  
Notification of when and where your  
shipment is delivered
- **Real-Time Notification:**  
Exception alerts via e-mail or SMS  
at various events

Condition monitoring with  
DHL SmartSensor GSM

Road



Air



Ocean



Warehouse



Source: DHL Smart Sensor, 1) Real-time mode is limited/not available in case of air cargo and ocean cargo on open sea

# Internet of Things

## Indoors: Connected warehouse

### Driving Efficiency



- Heatmap of warehouse operations.
- Net time travelled reduced by 18% per worker.

Source: DHL Supply Chain (2017), Cisco (2017)



# Internet of Things

## Indoors: Connected warehouse

### Health & Safety



- Proximity of forklifts and walkers
- Patterns for worker fatigue levels captured



Source: DHL Supply Chain (2017), IBM (2017)



# Internet of Things

## Outdoor: Improving Visibility

### Yard Efficiency



- Increase yard management efficiency for I2M operations
- Tracking, dispatching and analysis of trucks and dock status



Source: DHL Trend Research (2017)

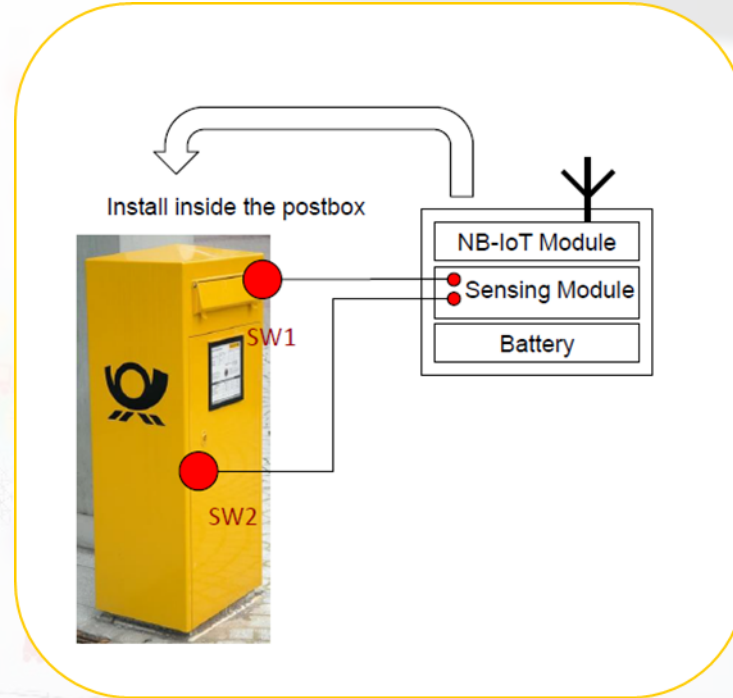
# Internet of Things

## Outdoor: Smart Mailbox

### Smart letter boxes



- Identify mailbox content and usage
- Optimize business and operational processes



Source: DHL Trend Research (2017)

## THE DIGITALIZATION ROADMAP LOOKS LIKE....

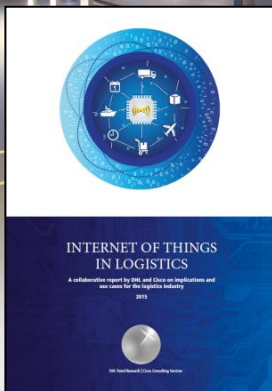
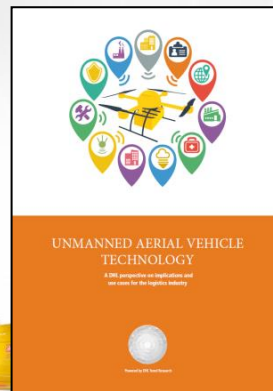
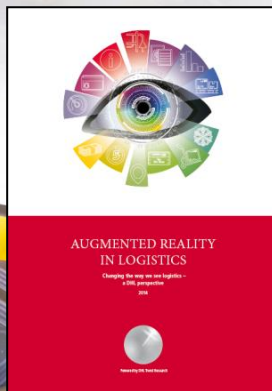
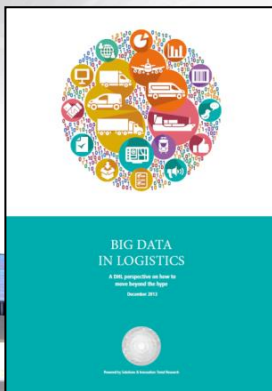
A word cloud on a light yellow background featuring various digitalization technologies. The word 'Innovation' is the largest and most central. Other prominent words include 'Automation' (vertical on the left), 'Digital' (vertical on the left), 'Analytics', 'Sensors', 'Blockchain', 'Digital Identifiers', 'Forecasting', 'IoT' (in red), 'RFID', 'AI' (in blue), '3D printing', 'Robots', 'Risk', 'RPA' (in red), 'Track and Trace', 'UAVs', 'Big data', 'Safety' (vertical on the right), and 'Robotics'.

Automation  
Digital  
Innovation  
Analytics  
Sensors  
Blockchain  
Digital Identifiers  
Forecasting  
IoT  
RFID  
AI  
3D printing  
Robots  
Risk  
RPA  
Track and Trace  
UAVs  
Big data  
Safety  
Robotics



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COME AND VISIT US AT ONE OF OUR INNOVATION CENTERS

Innovation Center  
Americas opening in 2019



**Global Flagship DHL Innovation Center**  
*Near DPDHL headquarter, Germany*  
*Build in 2007, re-opened in 2015*



**DHL Asia Pacific Innovation Center**  
*Singapore*  
*Open since December 2015*

# HOW TO ENGAGE WITH US?

Give us  
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with us

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workshops

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A red robotic arm, likely an industrial robot, is shown in a close-up. The arm has a small screen on its upper section displaying a stylized face with large blue eyes and a simple mouth. The background is a bright, out-of-focus industrial setting with blue and white structural elements.

# THANK YOU

**DHL** INNOVATION CENTER

INSPIRE | CONNECT | ENGAGE