ROBOTICS & AUTOMATION

CASE STUDIES

DHL
Group

We work with a clear focus on technologies that make a difference. A selection of examples from >3,700 devices deployed are in the following slides

12 Focus technologies
identified along entire logistics process

Assisted Picking Robots	(un)Loading Technologies	Intelligent Process Automation
Goods-to-Person Robots	Data Analytics	Sortation Technologies
Packaging Technologies	Smart Operations	Supporting Robots
Indoor Robotic Transport	Wearable Devices	Asset Tracking & Monitoring

Large scale automation including ASRS, mechanized sortation, packing/ labeling automation and more
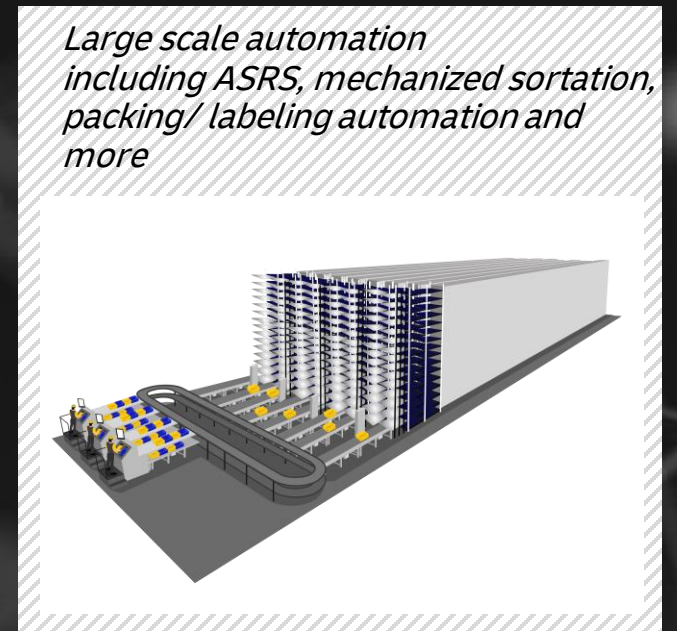
Investment of choice
Productivity and utilization increase, cost reduction

Provider of choice
Customer satisfaction increase

Employer of choice
Employee attraction and retention, overall satisfaction

Smart tasking system creates greater picking efficiency and order visibility

🚩 Customer Challenge

- Limited Warehouse Management System (WMS) functionality
- Orders are printed, manually sorted by tasker into assignments, then given to operator who fulfills them via a pick cart
- Operator required to sort through multiple pick lists as they navigate pick path
- Assignments often require items located throughout two level warehouse

💡 DHL solution

- Receive automated open order feed direct from customer
- Allow tasker the ability to view and wave work by priority, ship mode, area and other attributes
- Optimally generate pick cart assignments to minimize travel and respect capacity constraints

✋ Customer benefits

- Reduction of indirect planning time from 16 hours to 4 hours
- 30% increased pick productivity due to reduced travel and increased pick density
- Reduced error through consolidated pick list
- Ability to navigate COVID-19 order backlog as a result of increased visibility of order priority

Customer facts

Geography	US
Sector	Life Science
Solution	Algorithmic Optimization
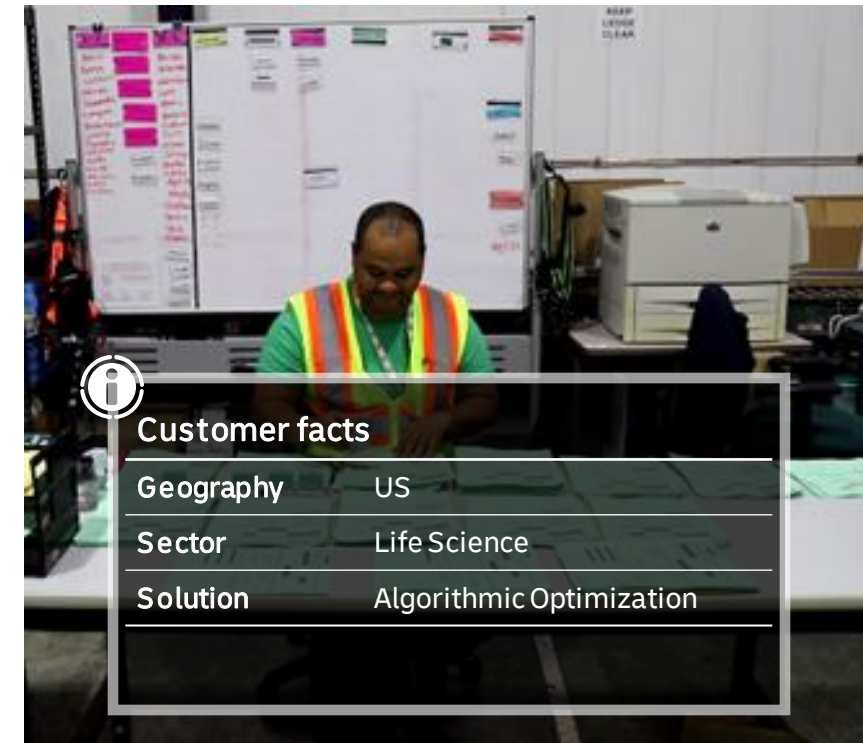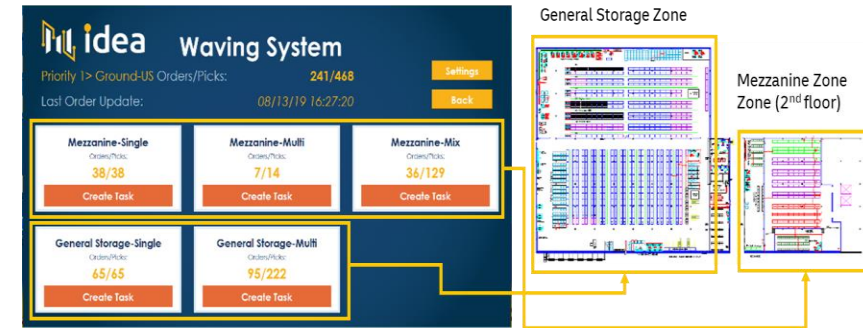
The Honeywell wearable scanners enables hands-free operations and makes picking processes more efficient

🚩 Customer Challenge

- During the picking process, the traditional RF gun is picked up to scan goods picked and put down to handle the goods

- The traditional RF guns is quite heavy to carry

- The traditional RF gun can only be used for core warehouse processes

💡 DHL solution

- Honeywell CT60 (Smart Device), and Android device that supports core WH processes and other operational application that are managed in the DHL **SmartOperations** App store

- Honeywell 8670 (Ring scanner)

- Deployed over several sites in all course in the course of 2019

🤝 Customer benefits

- With hands-free operation, the picking up and putting down the RF scanner in between scanning and handling the goods is eliminated

- Productivity increased due to the time saved with hands-free operations

- Positive user feedback due to improved ergonomics and hands-free operations

Customer facts	
Geography	EMEA
Sector	All Sector
Solution	Smart Scanning

Goods To Person Robotics system for after sales operation

Transformational Robotic Mobile Shelving solutions to improve efficiency, quality and reduce carbon footprint

Customer Challenge

- Tight labor market (10% decrease until 2025) unable to resource quality labor at the shop floor
- Increasing labor costs (3% YoY)
- Manual process lead to adhoc service quality issues and operational fallouts
- Operational "Waste" eg. Walking, waiting, communicating
- Warehouse space is scared in Tokyo area, storage density is key to keep cost down
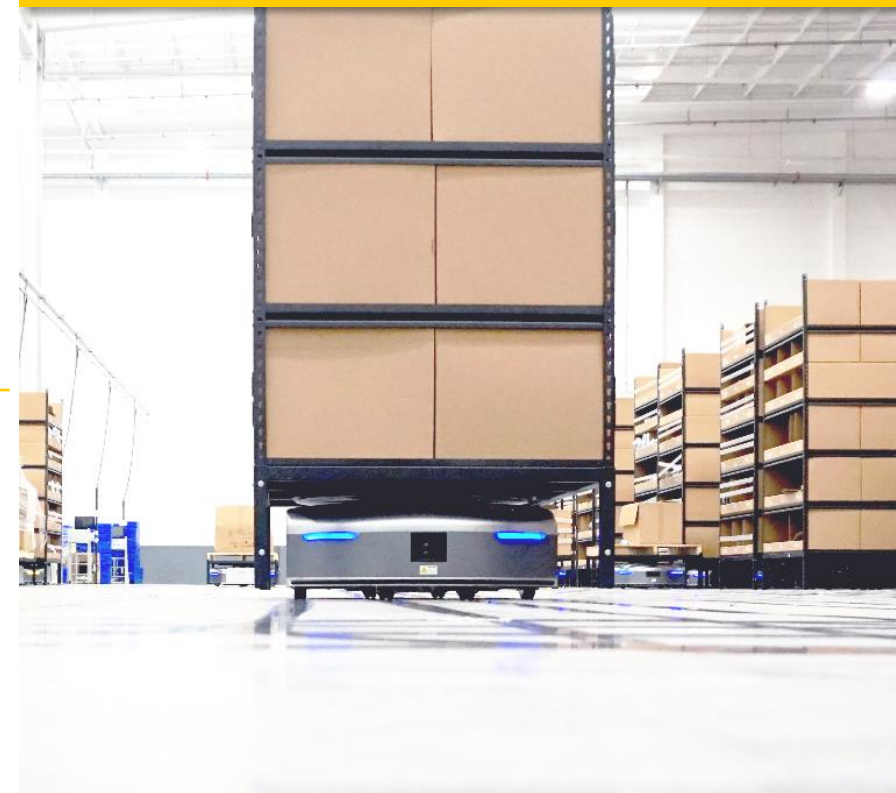
DHL solution

- DHL has implemented a Goods To Persons Robotics (GPR) system
  - 13 robots
  - 5 workstations
  - 510 racks
- The workstations design support the operator to ensure efficient and accurate order processing
- The GTPR system is fully integrated with the WMS, ensuring seamless and fast data exchange and inventory management

Customer benefits

- Mitigate tight labor market
- Reduce increasing labor costs
- Re-profile workforce to focus on value add activities to Dell
- Reduce carbon footprint: driving towards paperless transactions
- Improve customer experience: Online visibility of delivery details
- Scalability and flexibility. Managing increasing volumes by increase throughput and plug and play robots
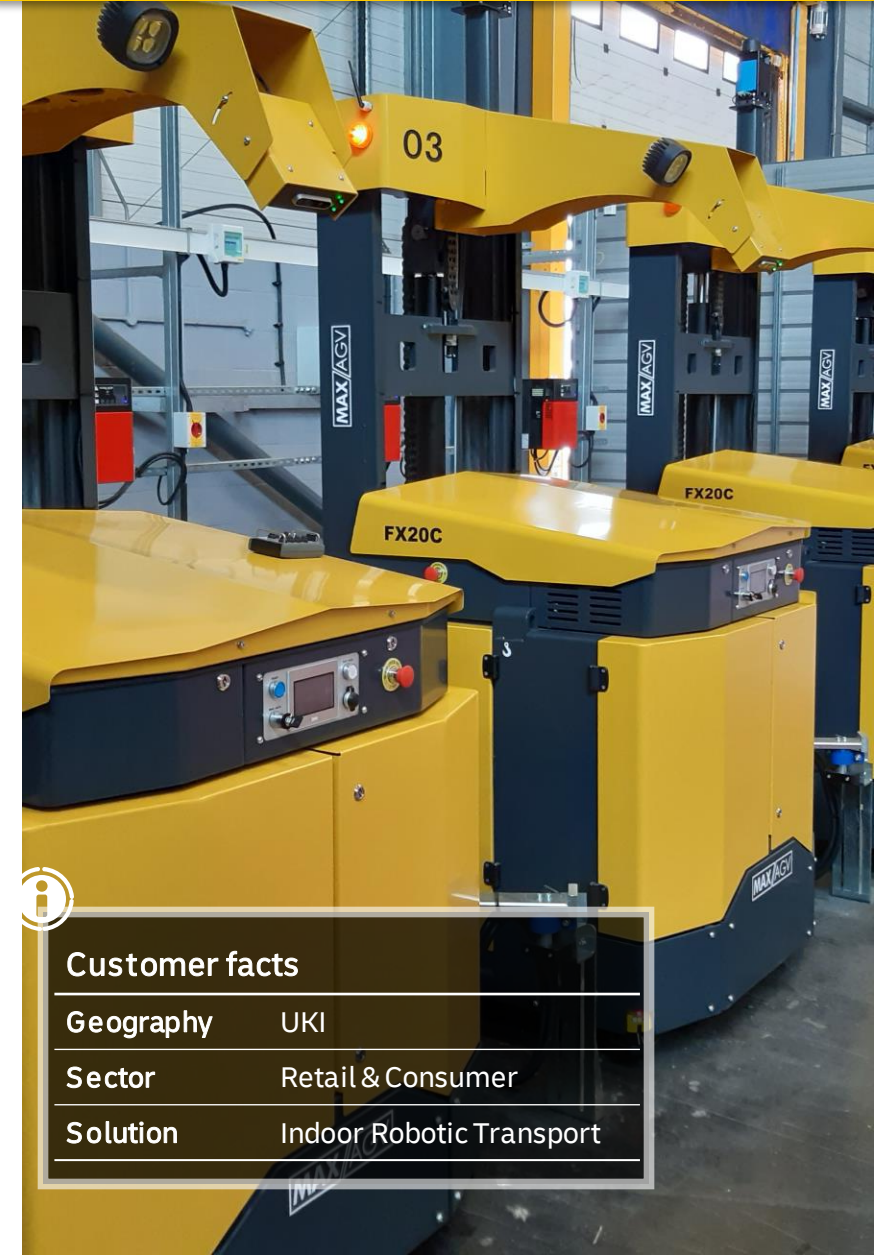
Customer facts	
Geography	Tokyo, Japan
Sector	Technology
Solution	Goods To Person Robotics

Robots autonomously transfer pallets between dock doors and automated warehouse conveyors and other locations.

- Labor shortages and rising costs drive need for increased productivity.

- Sustainable cost reduction through continuous improvement activities.

- Consumer industry with variable volumes and seasonal peaks.

- Large distances transporting pallets in the warehouse.

- Business critical operation – maintain responsive reliable service.

- Custom built Automated Guided Vehicles (AGVs) with laser navigation for accuracy.

- Inbound and outbound pallet moves between dock doors and automated warehouse conveyors.

- Multiple safety systems for collaborative working with associates and machinery.

- Fully integrated to WMS

- Systems resilience and Disaster Recovery.

- Opportunity charging.

- Flexible system which can be scaled with more AGVs to cover volume increases.

- Multi customer operations to share costs.

- Reduced cost to serve.

- Consistent, predictable capacity.

- Extra volume capacity such as adding night shift and weekend working easily catered for at the touch of a button.

Customer facts

Geography	UKI
Sector	Retail & Consumer
Solution	Indoor Robotic Transport

Tracking of customer assets through supply chain using DHL's Internet of Things Platform

Case study

Customer Challenge

- Asset control issue in managing Roller Cage deliveries to 6000+ convenience stores
- Slow turnaround or loss of Roller Cages and subsequent network shortages
- Shortage drives increased rental/replacement costs
- Site Roller Cage shortages push additional cost into transportation of alternative media

DHL solution

- Long life asset tracking device fitted to core Roller Cage fleet
- National visibility of fleet through DHL Internet of Things (IoT) platform
- Associated analytics to support cage recovery and store accountability
- Daily reporting of key metrics including dwell time, cage balance by site/customer, and exceptions

Customer benefits

- Reduction in cost and resources to manage claims for missing cages
- Reduction in asset pool (only owned assets and no rental)
- Reduced exceptional use of other media for transport (e.g.: cages/tets) reducing transport costs.
- Evidencing of:
  - Loss by Network Exit
  - Stores hoarding cages
  - Cage dwell times
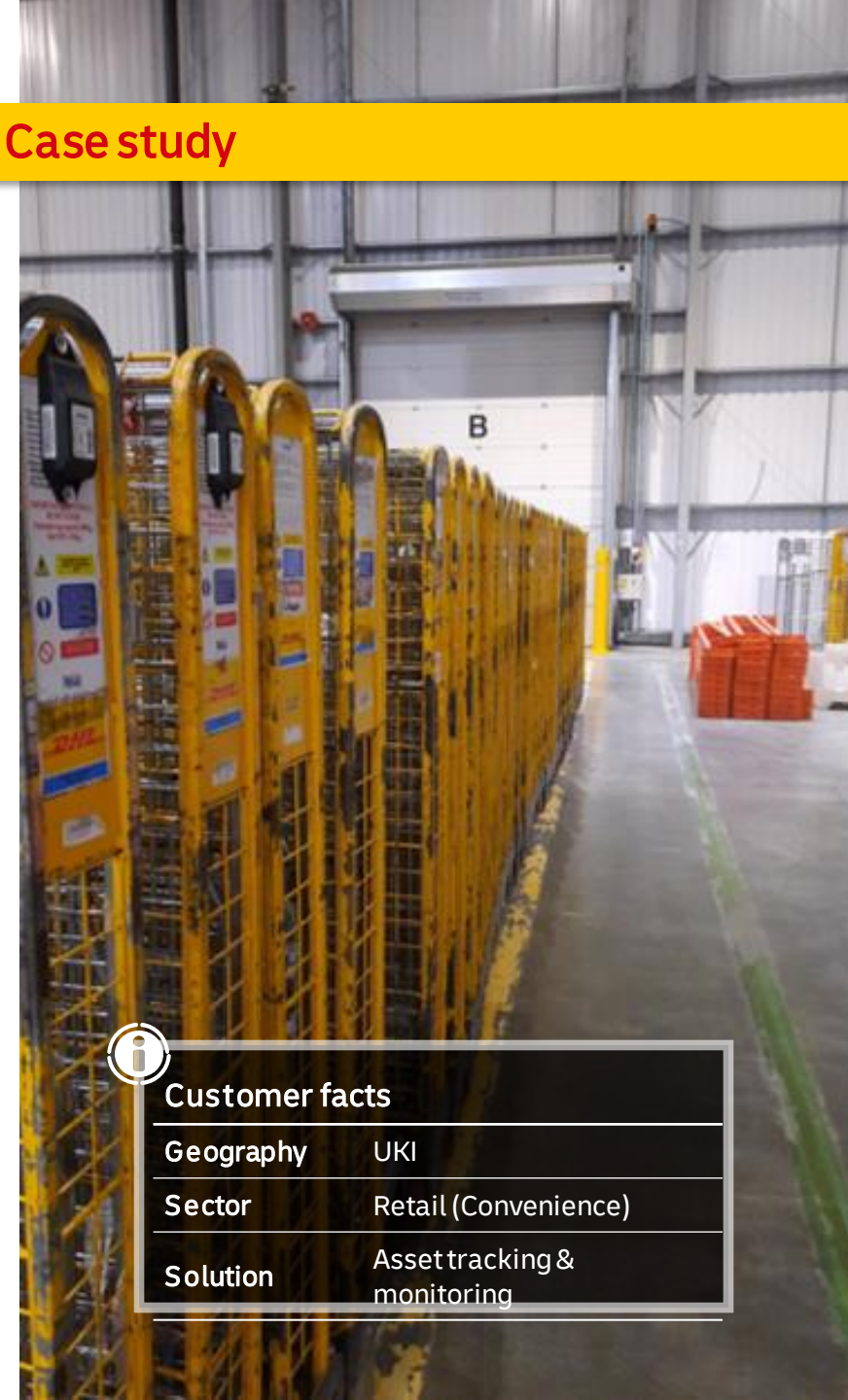
Customer facts	
Geography	UKI
Sector	Retail (Convenience)
Solution	Asset tracking & monitoring