



ACCELERATED DIGITALIZATION WITH DHL

Advancing the future with Autonomous Mobile Robots

MOBILE ROBOTICS SUMMIT 2024
PAUL SCHLINKERT – DHL SUPPLY CHAIN



What is **DHL Supply Chain**?



What is our Approach to **Accelerated Digitalization and Automation**?



Which **mobile robotics** solutions did we implement and scale?

DHL Supply Chain is the #1 contract logistics player

Operating >2,000 locations in 50+ countries

180,000+

Full time
ASSOCIATES

Services in every
major country

50+

Countries covered
worldwide

Warehouses in all
commercial centers

2,000

Warehouses and
locations



**Ever-increasing
customer expectations**



Labor Shortage



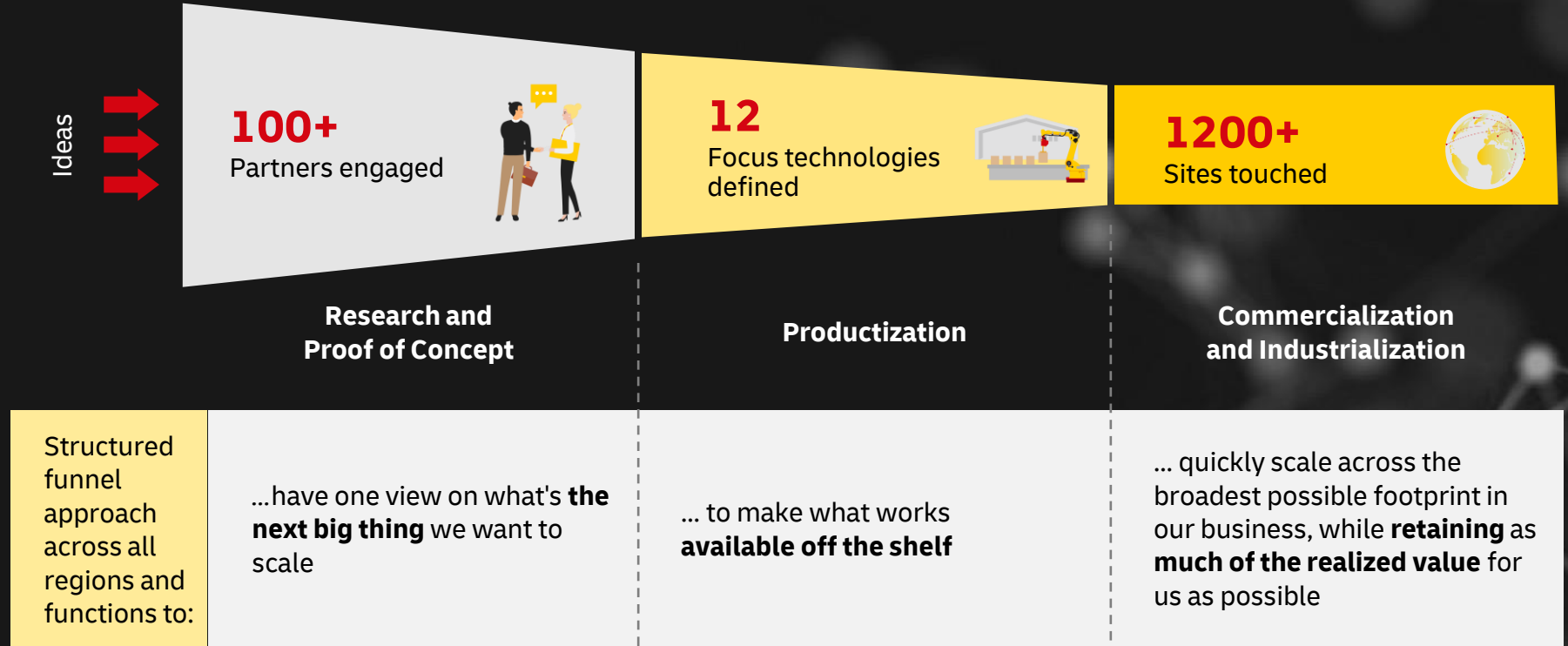
**Scarcity of warehouse
space**



**Accelerating technology
pace**

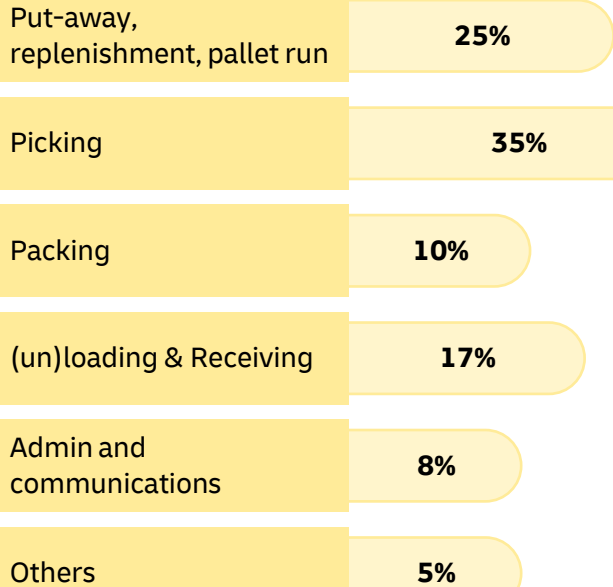


Our Accelerated Digitalization and Automation (AD&A) journey started years ago, and it is far advanced and industry-leading



We have visibility on where we spend how much of our human labor. With AD&A we utilize this information to select our focus technologies and innovation areas

Visibility on labor hours per operational activity



AD Technology Portfolio

Assisted Picking Robots



(un)Loading Robots



Intelligent Process Automation



Goods-to-Person Robots



AI & Data Analytics



Sortation Robots



Packing Robots



Smart Operations



Supporting Robots



Indoor Robotic Transport



Wearable Devices



Asset Tracking & Monitoring



We work with focus and consistence across all regions – to rapidly identify and replicate best practices...

DHL

FOR INTERNAL USE

Technology

Technology focus

- ASRS Robots
- Cube Storage Robots
- Floor Bin Robots
- Floor Platform Robots
- Vertical Lift Module
- Vertical Buffer Module

Current deployment phase

- 01. Potential opportunity
- 02. Site assessment
- 03. Planning / approval
- 04. Deployment in progress
- 05. Go-live completed

Region

- APAC
- EMEA
- Global Functions (IPA)
- LATAM
- MLEMEA
- NORAM

Country

- (Blank)
- England
- Ireland
- Scotland
- Spain
- United Kingdom

Scope

All

Enclosed system with integral columns of trays with an insert and retrieve shelves

Enclosed shelving system with a movable mast running down retrieving totes

Microsoft Bing

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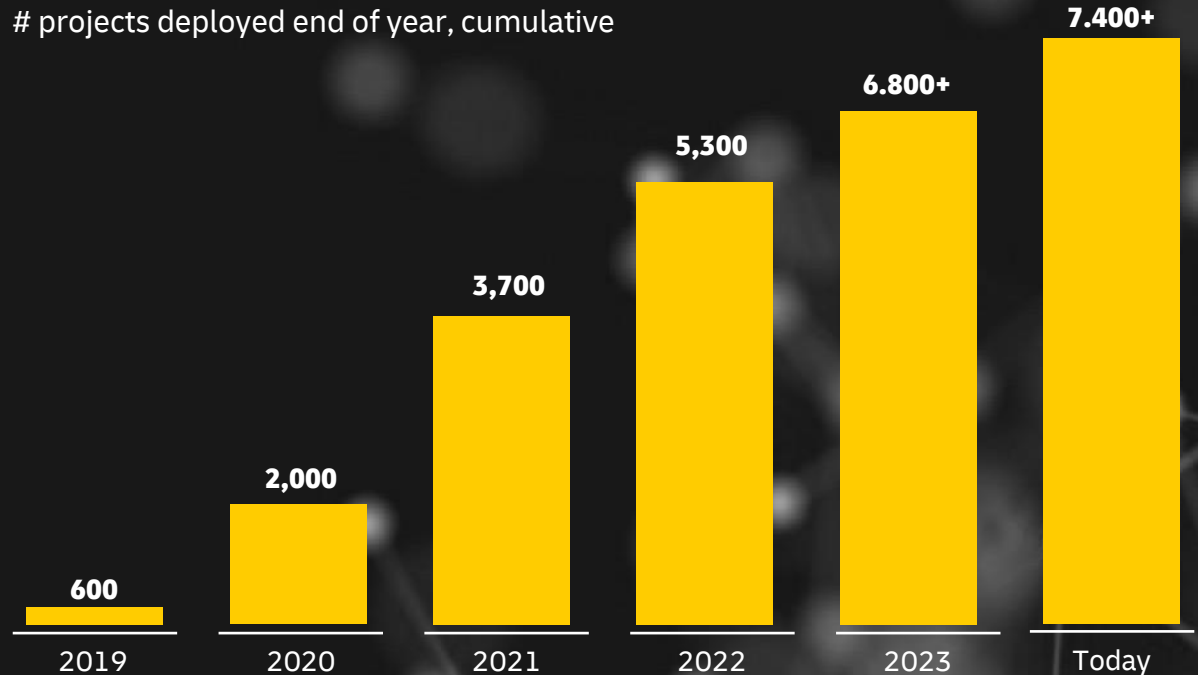
... and truly scale effective operational technology broadly across our business



Real innovation is when you implement at large scale...

... otherwise, it's just a nice idea.

projects deployed end of year, cumulative



The first deployments of assisted picking robots laid the foundation for success, and we continue to implement and scale more solutions



Key benefits

- >30% increase in Units Picked Per Hour
- Less physical demanding work
- Minimizes worker fatigue
- Reduces error rate
- Increases employee satisfaction
- 80% decrease in training time



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Indoor Robotic Transport is a key technology area for DSC with a wide range of different solutions productized and ready to be deployed



Key benefits

- The solutions allows associate to focus on value adding tasks by eliminating travel distances for operators
- Ability to work 24/7
- Additional saving on MHE lease (auto. Forklifts)
- Increased safety and reduced damages.
- Increased inventory accuracy
- Reduced error rate

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We successfully deployed solutions for automating (un)loading of loose and palletized load and are scaling globally



Key benefits

- Reducing need for colleagues (un)loading, supporting them to focus on more value-adding tasks
- Reduced error rate
- Eliminating or assisting with the heavy burden of lifting cases (loose load)
- Can be combined with a robotic palletizer to further improve the process (end-to-end) (loose load)
- Improved efficiency for (un)loading cases

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THE JOURNEY TO STRETCH



2018
Partnership
formed



2019
Handle
PoC



2023
Live
deployment



And beyond
Scale
deployment

More mobile robotic solutions are maturing on the market and are implemented across our global warehouses



Key benefits

- Improved operational efficiency
- Less manual sorting for colleagues
- Less walking between locations
- Reduced errors
- Higher throughput
- Efficient use of space
- Can be easily scaled up or down for peak



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