IoT im Supply Chain Management

56. Member-Apéro der asut

Mittwoch, 5. Dezember 2018,

DHL Supply Chain, Derendingen

Dr. Christian Kubik
Head of Business Development & Account Management
DHL Supply Chain Österreich & Schweiz

The **DIGITAL opportunity** is huge…

TECHNOLOGY

40% of all data generated by 2020 will come from **connected sensors**
Frost & Sullivan

25 Billion **Connected „Things“** will be used in 2020
Gartner

VALUE

$1.7 Trillion **Worldwide IoT Market** by **2020**
IDC

$10-$15 Trillion added to the global GDP by the **„Industrial Internet“** market within the next 20 years
GE

OPPORTUNITY

25% Reduction in **maintenance costs** through IoT
U.S. Department of Energy

Savings of $90 Billion generated by **connected industrial machinery** to make oil and gas exploration **1%** more efficient
GE

Source: DHL Supply Chain Digitalization Strategy

Ready for a fast-changing world

CHANGING CUSTOMERS

European industries could grow EUR 1.25 trillion from Industry 4.0 [1] **by 2025** by adopting digital business models and improving their digital processes.

More than 90% of companies say importance of data and integration with suppliers will increase [2]**.**
Significance of data gathering, analysis and utilization for decision making is more important than ever.

1) Frauenhofer / 2) PWC

CHANGING LOGISTICS LANDSCAPE

Demand for more flexible supply chain solutions is increasing.
3 in 5 companies plan to invest significantly in demand forecasting and want to decrease safety stock levels [3].

Efficiency needs to increase.
Leaders in digital supply chain management have 40% to 110% higher operating margins than their competitors [4].

3) AT Kearney / 4) BCG

CHANGING TECHNOLOGIES

81% of logistics companies expect Artificial Intelligence to have a strong impact on their business [5].
AI will help to raise efficiency and open up new business opportunities.

By 2022, 1 trillion sensors will be connected to the internet [6].
Data generated from sensors will be key for analysis and predictions.

5) Forbes / 6) Supply Chain Digital

Our digitalization space

It is necessary to digitalize processes to meet an ever increasing demand for digital solutions and more efficient processes, and improve our customers' experience – and that of their customers.

Business exploration

We **grow into future logistics verticals** by partnering with think-tanks and academia, industry giants and start-ups alike, to incubate ideas and invest in new business models, catalyzing a business transformation.

Technology exploitation

We **apply digital technology in our existing business footprint** to deliver superior customer experience and increase efficiency especially on core business processes e.g. augmented reality for picking in warehouses (Vision Picking).

Culture and Capabilities

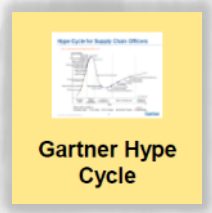
Remain focused, agile and adaptive by living up to our leadership attributes

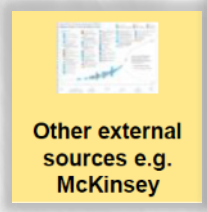
Source: DHL Supply Chain Digitalization Strategy

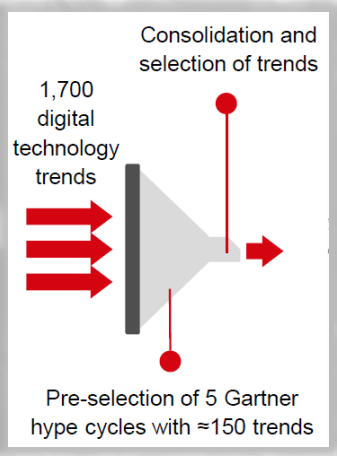
Developing the DHL Supply Chain hype cycle

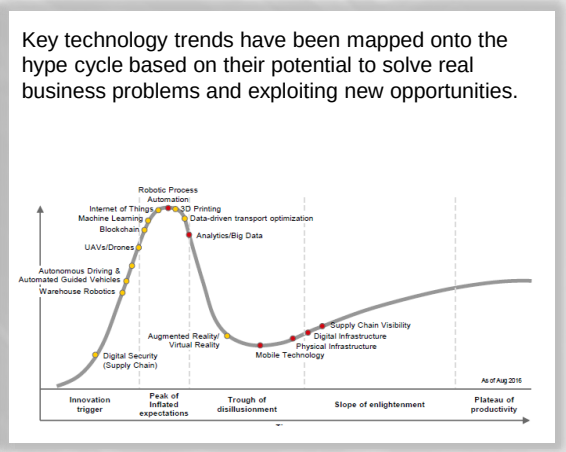
The hype cycle is a graphic representation of the maturity and adoption of technologies based on both internal and external sources, and how they are potentially relevant to solving real business problems in supply chains.

- The hype cycle forms the foundation for evaluating technological focus areas.
- We have evaluated over 1,700 digital technology trends from both external and internal sources.
- Trends that have the potential to support supply chains in solving real business problems, and exploit new market opportunities were selected and consolidated for the DSC hype cycle.



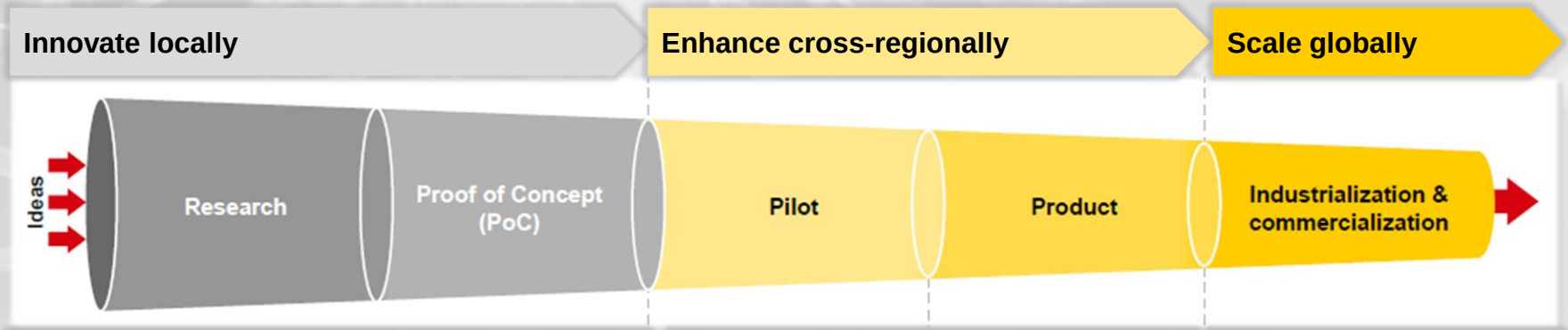






Source: DHL Supply Chain Digitalization Strategy

Local innovation & global scalability create best-in-class customer solutions



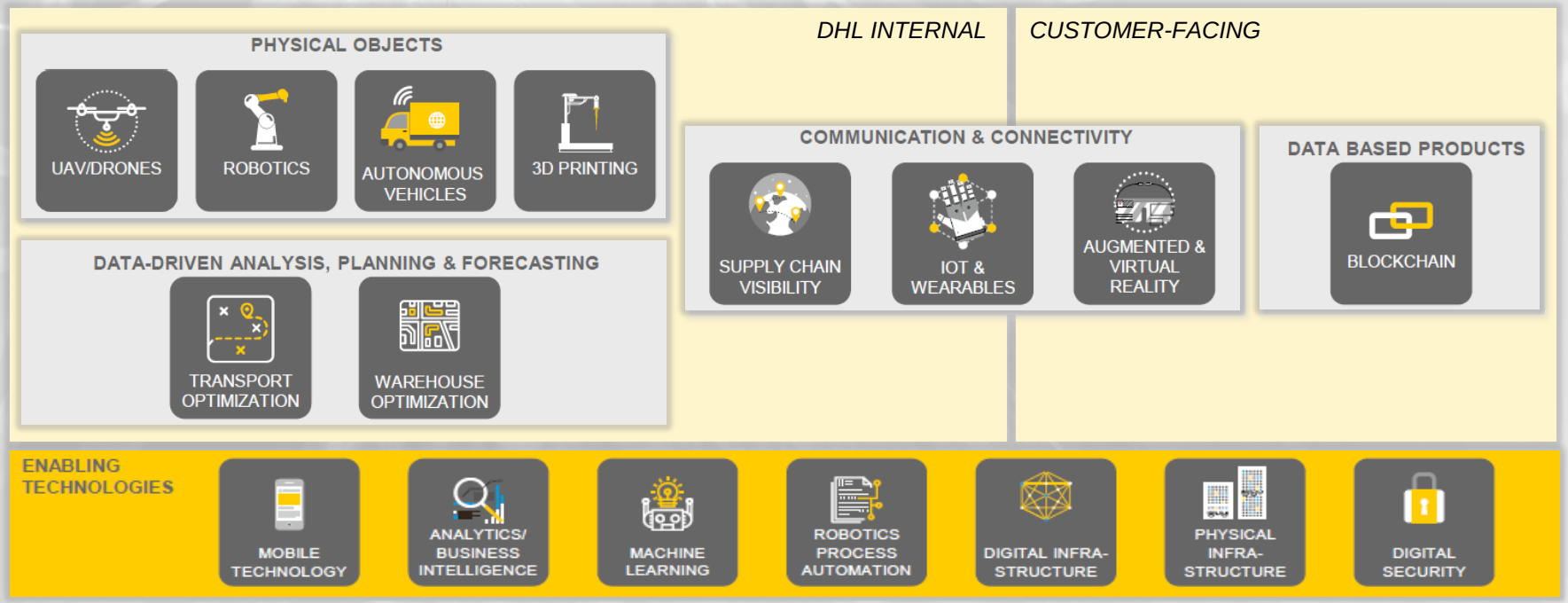
- Leverage local innovation power and agile approaches
- Develop ideas from voice of customer, operations and technology
- Identify promising use cases
- Derive estimates for increased productivity, customer centricity or employee engagement
- Prove feasibility of technology

- Prove scalability and global technological and organizational readiness
- Develop cross-regional roll-out capabilities and toolkits
- Confirm benefits

- Roll-out global products via site roadmaps
- Commercialize the solution
- Deliver benefits on large scale

Source: DHL Supply Chain Digitalization Strategy

Trends which will transform the most critical parts of the business



IoT: Internet of Things; UAV: Unmanned aerial vehicles

Source: DHL Supply Chain Digitalization Strategy

Translating trends into use cases

Trend

- Describes general technological development, e.g. new hardware or algorithms
- Is currently being researched or already applied by other industries
- Is not specific to DSC

Use case

- Application of a technological development to one or several processes of DSC
- Should result in a concrete improvement in a defined process
- Is specific to logistics
- Several use cases can exist for each technological trend

Examples

Augmented Reality & Virtual Reality	• Vision Picking • Virtual reality training programs for warehouse personnel
Drones/Unmanned Aerial Vehicles	• Drones for security and surveillance in a warehouse • Drones for inventory management within a warehouse

Source: DHL Supply Chain Digitalization Strategy

Use Case IoT / WiFi Warehouse Operations Tracking

Tracking of MHE movements to identify safety or efficiency improvements

Maturity

Research | **PoC** | Pilot | Product

Description

- Operational processes within a warehouse are tracked in real-time and visualized to identify safety or efficiency improvements/gains
- Position of material handling equipment (MHE) is tracked using the existing Wi-Fi network and mapped to the warehouse layout
- Automated identification of near-collisions or inefficient pathways is possible

Key Point of Contact

- Xavi Esplugas, IT Planning & Architecture, MLEMEA

Benefits:

Growth	**Productivity**	*Innovation*	*Quality*	*Employee engagement*	**Health & Safety**	*Carbon Footprint*

Source: DHL Supply Chain Digitalization Strategy

Use Case IoT / Automated Inventory Processing

Automated tracking and status processing of inventory within a facility

Maturity

Research | PoC | Pilot | Product

Description

- Ability to track inventory within a warehouse
- Automatically update the system with its current location and status based on detection via beacon or reader
- Particular focus on built to order inventory
- Support management for high value inventory through real time detection and location tracking

Key Point of Contact

- John Unsworth, Solutions Architect, DSC UKI

RFID

ıventory tagged ith RFID or BLE Tags

Beacons/ readers at strategic points detect movement or signal process status change

Inventory status automatically updated based on detections

Benefits:

Growth	Productivity	Innovation	Quality	Employee engagement	Health & Safety	Carbon Footprint

Source: DHL Supply Chain Digitalization Strategy


Thank You
VISION SUITE
DHL