SELF-DRIVING VEHICLES
Innovation Center - Best Practice Sharing
Logistics Trend Radar 2016

FOUR SOURCES OF INSPIRATION
NEW DIGITAL TRENDS IN LOGISTICS: WHY NOW?

1. **Market Challenges**
   - Double-digit growth rates in labor intensive eCommerce
   - Increasing customer expectations ("faster, more convenient, better pricing")
   - Aging society and lack of skilled workers

2. **Overcoming Barriers**
   - Tremendous improvements in robot capabilities due to technological advancements
   - Decreasing prices of enabling technologies and modules

3. **New Business Impact**
   - Increasing number of start-ups and seed-investment (e.g. Magazino)
   - High investments from players such as Amazon or Google (e.g. Kiva and Boston Dynamics invest)
   - Spill-over effects from other industries (e.g. Consumer/Retail)
KEY BENEFITS - SELF-DRIVING TREND

- Improved safety
- Lower environmental impact:
- Higher efficiency:
- Greater comfort:
SELF-DRIVING VEHICLES IN LOGISTICS
### Driverless Vehicle Use Cases in Logistics

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#### Warehousing operations
- Autonomous handling
- Collaborative order picking
- Trailer unloading
- Mobile piece picking
- Value added services

#### Outdoor logistics operations
- Autonomous parking and docking in yards
- Transport of containers and unit load devices in harbors and airports

#### Line haul transportation
- Assisted highway trucking
- Highway pilot
- Convoying
- Fully autonomous trucking

#### Last-mile delivery
- Support vehicles
- Parcel station loading
- Self-driving parcel station
- Autonomous shared cars
KEY CONCERNS - SELF-DRIVING TRENDS

Regulations, public acceptance & liability

Use Cases in Logistics

Technology

Regulations, public acceptance & liability
THE MORAL MACHINE
KATRIN’S MORAL RESULTS

Most Saved Character

Most Killed Character

Saving More Lives

Protecting Passengers

DHL Trend Research
USE CASES IN LOGISTICS

1. Warehousing operations
   - Autonomous handling
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   - Trailer unloading
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   - Value added services

2. Outdoor logistics operations
   - Autonomous parking and docking in yards
   - Transport of containers and unit load devices in harbors and airports

3. Line haul transportation
   - Assisted highway trucking
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4. Last-mile delivery
   - Support vehicles
   - Parcel station loading
   - Self-driving parcel station
   - Autonomous shared cars

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LESSONS LEARNED

Logistic industry is in the prime position to further shape the future of self-driving vehicles after public acceptance and regulations hurdles are solved.
WAY FORWARD

1. Think small
2. Be Patient
3. Proof it
4. Go BIG!
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LET’S SHAPE IT TOGETHER!