# TECHNOLOGY CONFERENCE 2024

## AI IN SUPPLY CHAIN – HOW AI IS CHANGING THE LOGISTICS FOR THE FUTURE

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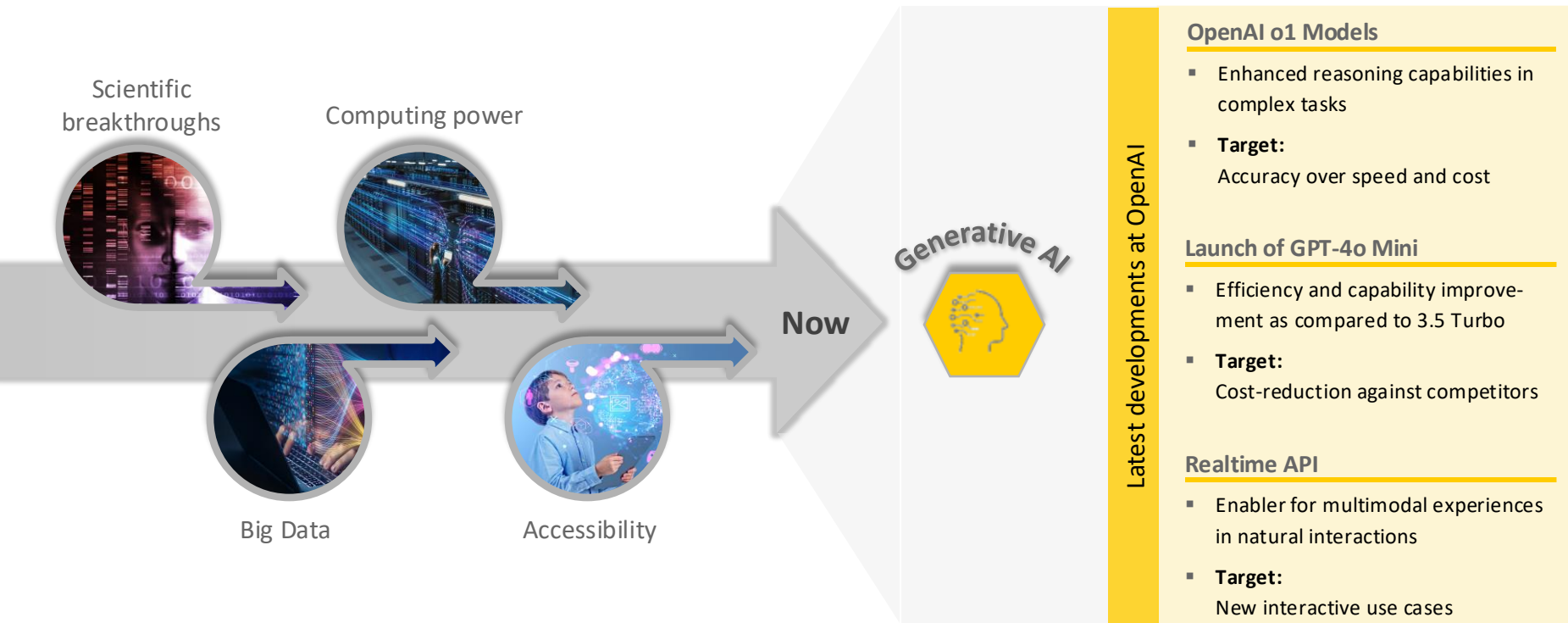Optimization of flight network & maximization of utilization

Digitalization of the Last Mile for parcel delivery

Application of Computer Vision in the parcel sorting

Automation & Optimization of processes

# AI has been driven to the beginning of a generative era

Scientific breakthroughs

Computing power

Big Data

Accessibility

**Now**

Generative AI

**Latest developments at OpenAI**

**OpenAI o1 Models**

- Enhanced reasoning capabilities in complex tasks

- **Target:**
  Accuracy over speed and cost

**Launch of GPT-4o Mini**

- Efficiency and capability improve-ment as compared to 3.5 Turbo

- **Target:**
  Cost-reduction against competitors

**Realtime API**

- Enabler for multimodal experiences in natural interactions

- **Target:**
  New interactive use cases

# Recent Evolution of AI – in general and in DHL Group

| | EARLY AI | **2010** MACHINE LEARNING | **2015** DEEP-LEARNING | **2023** GENERATIVE AI |
|---|---|---|---|---|
| Computing Power[1] | 1m GFLOPS | 34m GFLOPS | 143m GFLOPS | 1.2bn GFLOPS |
| Users | Niche | Experts, broader community | Experts | White-collar workforce |
| Application examples | Research, Database filtering | Forecasting, ETA predictions | Text Analytics, image processing | Content generation, creative tasks, reasoning |

**DHL Group**

| | | Small AI Teams in BUs and centrally | Lighthouse projects deployed across company-specific areas. | Company wide use of AI, cross divisional experts |

*BAP: Image recognition in P&P Hubs*

*Customs Description Quality Checker*

*PCT: Product classification tool for customs*

*Geocoding* *OnTrack* *Smart pricing* *DHL GenAI Hub*

1) Computational capacity of the fastest supercomputer as per number of floating-point operations per second, Source

# We are enhancing the efficiency of our customs processes with AI

| A connected world with barriers | Global trade across borders | Regulations as impediment | Customs processes are tedious and expensive |

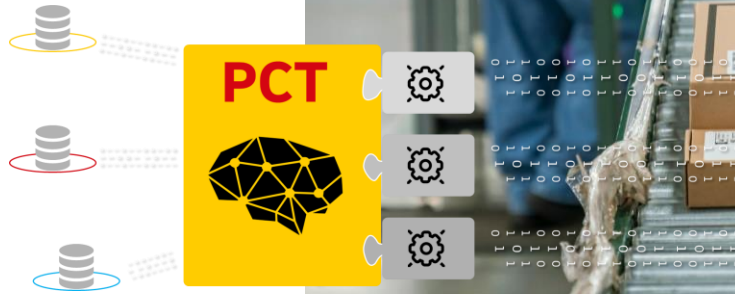**We deployed a group-wide Product Classification Tool for Customs**

- Best-in class internal solution
- Leveraging DHL data asset
- Applying AI to predict customs codes

**35+mn**
unique product descriptions in data

**50ms**
average response time

**PCT**

Acceleration of processes

Supporting Customs Audit

Improve Master Data Quality

# We are supporting our couriers and customers with routing and tracking

| | | | |
|---|---|---|---|
| **Last-mile routing as most costly process** | **Highly-complex task with many external factors** | **Unique challenge – every day in each route** | **Tacit knowledge of experienced couriers valuable** |

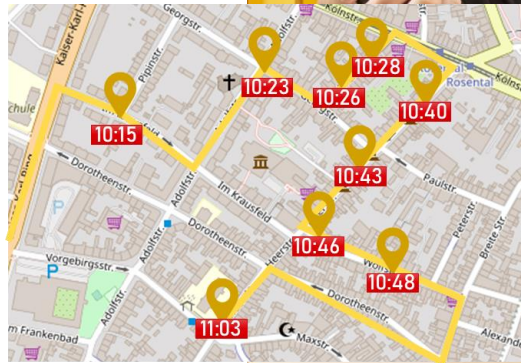**Courier-oriented routing and delivery time prediction**

➢ Learning from couriers' experience
➢ Optimizing driving and service times
➢ Enabling advanced tracking features

| **>90%** | **18m** |
|---|---|
| acceptance of provided tours | average prediction error |

- Increased courier satisfaction
- Reduced last-mile delivery costs
- Increased customer satisfaction

# We are changing the game for our white collar workforce

**Generative AI models change the way we work**

**Usage of input data as training data is an issue**

**Invaluable scattered knowledge**

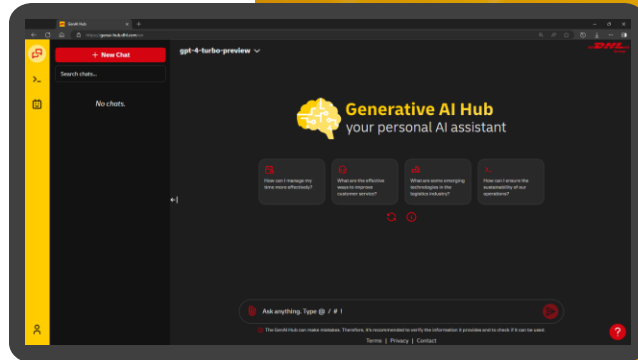**Multiple vendors**

### Generative AI Hub

- Provide secure and compliant access to cutting-edge Generative AI models
- One internal interface for the use cases that make sense

**73k**
Unique users

**4.6m**
prompts



Advanced internal know-how

Averted legal impediments

Starting point for GenAI use-cases

# (Generative) AI is also posing Risks & Challenges

## Ethics & Data Protection

- How is input data being stored / used?
- What about protection of data and IP?
- Risk of manipulation, bias and lack of fairness

**Legal**

**Accuracy**

**Computing Power**

# (Generative) AI is also posing Risks & Challenges

**Ethics & Data Protection**

**Legal**

- Copyright of AI generated content unclear
- Inputted data may be subject to restrictions

**Accuracy**

**Computing Power**

# (Generative) AI is also posing Risks & Challenges

**Ethics & Data Protection**

**Legal**



**Accuracy**

**Computing Power**

- Costly resource demand for training and inference

- Human energy consumption for complex tasks (~20W per day) is below GenAI (~2.9Wh per query)

- Users demand low latency and high performance

# (Generative) AI is also posing Risks & Challenges

**Ethics & Data Protection**

**Legal**

### Accuracy

- Response is wrong or biased but presented as correct (hallucinations)

- No up-to-date data

- Opaque model used to generate response (Black Box)

**Computing Power**

# We embed AI into our Strategy 2030

Strategy 2030
**Accelerate sustainable growth**

„Digital by default"

CYBER SECURITY

DIVISIONAL IT ARCHITECTURE / ROADMAPS

DIGITAL CUSTOMER INTERACTION (INCL. DIGITAL SALES)

PROCESS AUTOMATION AND AI (INFORMATIONAL)

AUTOMATION AND ROBOTICS (PHYSICAL)

- **High Impact Use Cases** across the Business

- **Compliance and Ethics** for sustainable AI

- Providing **AI tooling** to our workforce

- **Enabling** our **colleagues** and the **organization** to adopt