



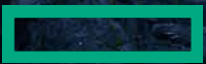
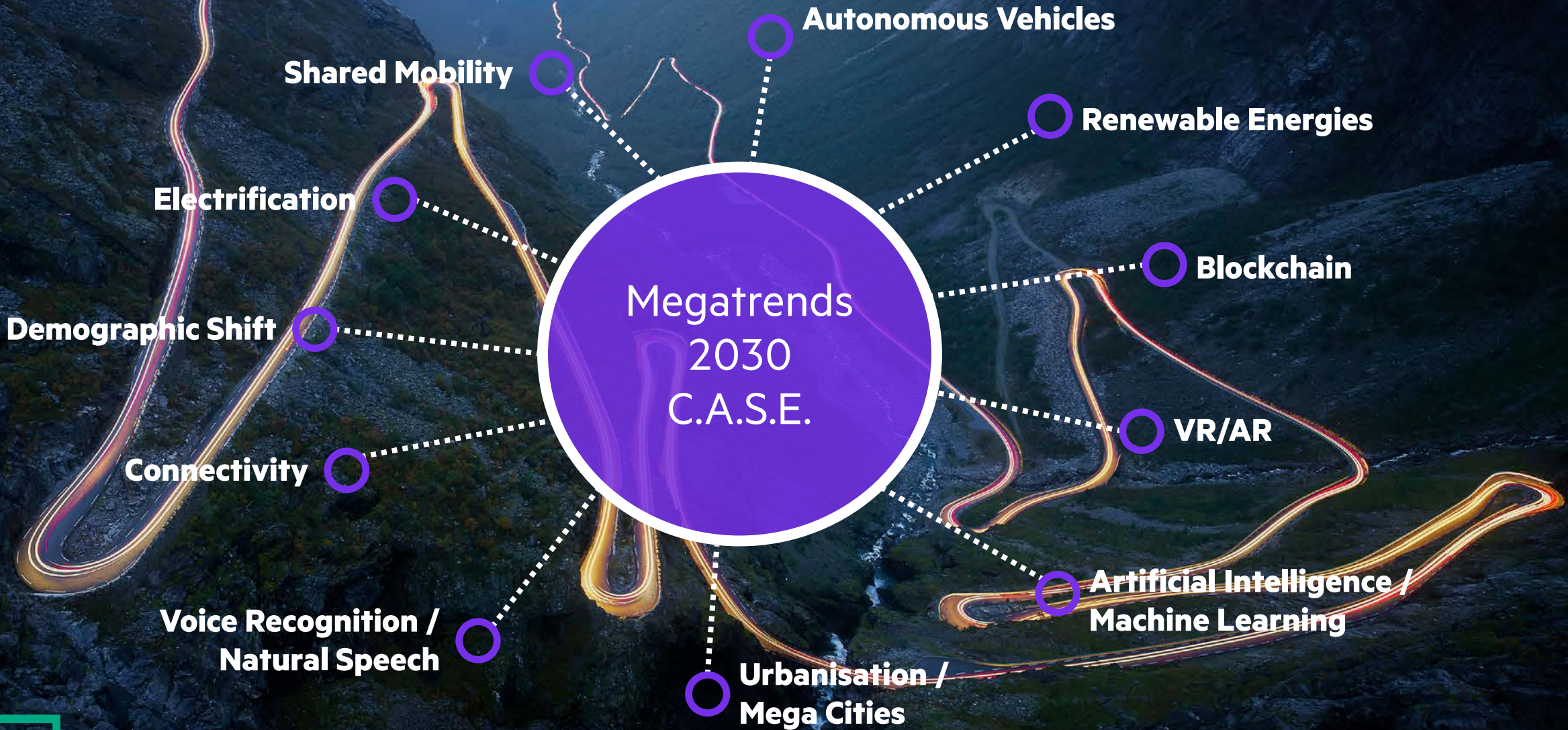
**Hewlett Packard
Enterprise**

MOBILITY 2030

Edmondo Orlotti - AI Business Development Manager - EMEA

June 24, 2021 – Teratec Forum

HPE POV: MEGATRENDS 2030 IN AUTOMOTIVE



SOLUTION:
As a service

INDUSTRY:
Automotive

REGION:
Europe

OBJECTIVES

- Design software to enable the first self-driving cars
- Reduce the number of traffic fatalities and injuries
- Bring safer cars to market sooner

REQUIREMENTS

- Build an AI algorithm that learns over time
- Create a round-trip data cycle that enables better AI decisions
- Deliver tens of thousands of driving simulations per second

SOLUTION

- HPE GreenLake Cloud Services
- HPE GreenLake Management Services
- HPE ProLiant DL Gen10 servers
- Lustre filesystem
- HPE Data Management Framework
- Advisory and Professional Services
- HPE Security and Risk Management Services



OUTCOMES

- Develops and deploys AI solutions faster than the competition
- Builds the foundation for fewer accidents and a safer world
- Gains more agility at a lower cost with HPC as a service



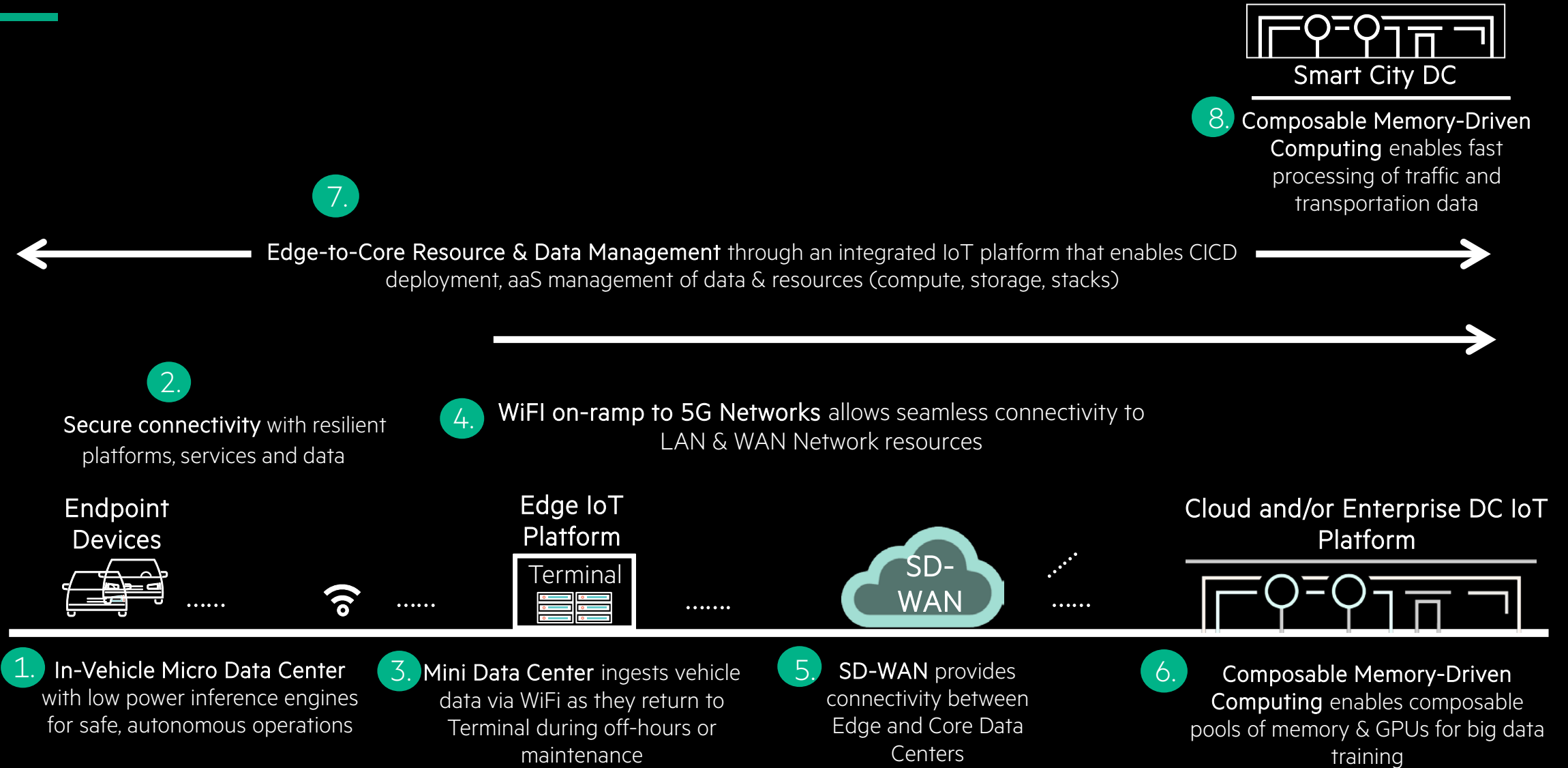
**INFORMATION TECHNOLOGY
IS AT THE HEART OF THE NEW MOBILITY**

Today 80% of data processing and analysis that takes place in the cloud occurs in data centres and centralised computing facilities, and 20% in smart connected objects, such as cars, home appliances or manufacturing robots, and in computing facilities close to the user (“edge computing”). By 2025 these proportions are set to change markedly

Gartner (2017)



INTELLIGENT MOBILITY – SPANNING EDGE/CLOUD/CORE



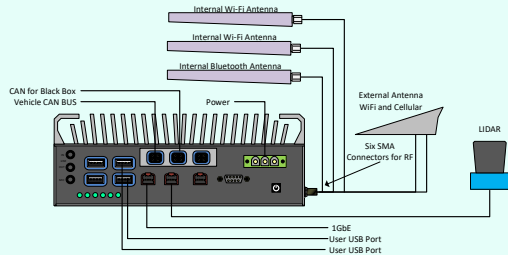
HPE'S EDGE-TO-CORE / CLOUD SOLUTIONS AND PARTNERSHIPS ENABLE FASTER TIME TO INSIGHT

Secure Connectivity Service

Secure Connectivity Service

1. In-Vehicle Test Systems

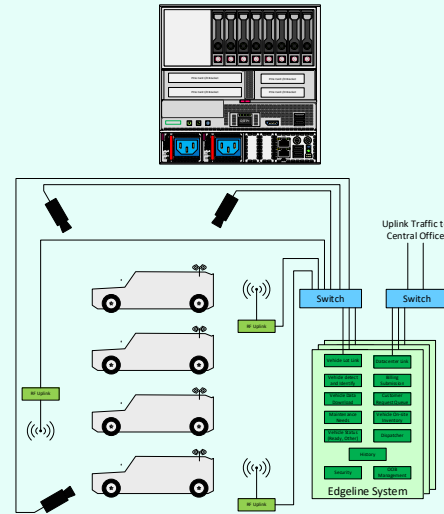
Edgeline Platform



2. In-Vehicle Inferencing Dot Product Engine



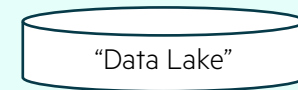
3. Edgeline Terminal Systems



4. Training & Validation Systems



5. Data Lakes Systems



6.

Connectivity, Hybrid Estate Orchestration, Life-cycle Management

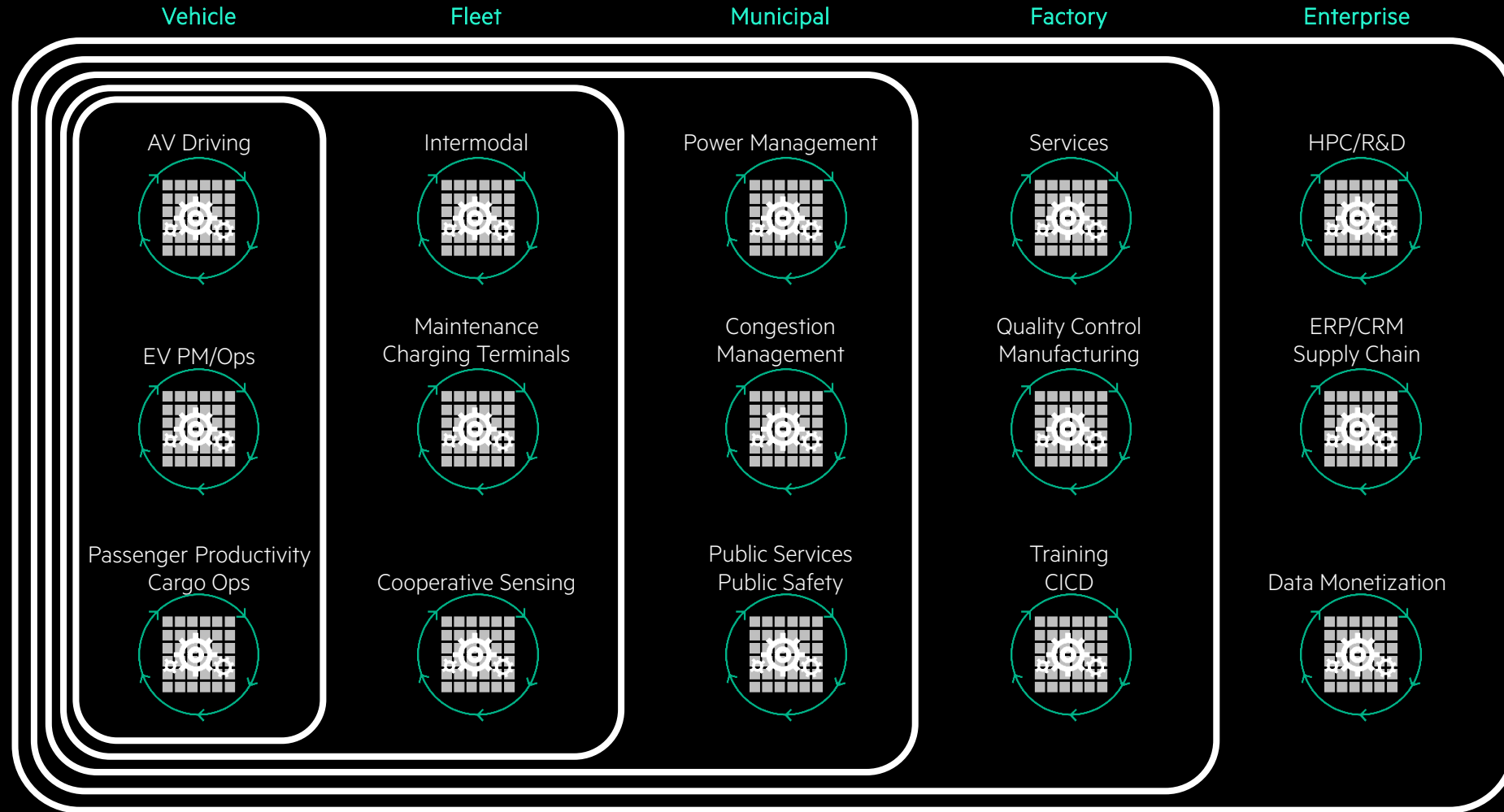
Examples: E2C Network & Security, Orchestration & Management (e.g. device onboarding, light touch provisioning; container mgt.)

7.

AI, Data and Analytics Partnerships and Services

Examples: Data Science Tool Chains; AI Frameworks, Advisory and Managed Services

INTERLOCKED INFORMATION LIFECYCLES



Programming

Moore's Law

Data lakes

Imperative

Scarce memory

Training

New physics

Data everywhere

Declarative

Abundance

DEFY CONVENTIONS

Data burden

Proprietary

Central authority

General purpose

Hindsight

Opportunity

Open

Distributed

Built for purpose

Foresight








DEFY CONVENTIONS - THE HYPER-COMPETITIVE DIGITAL ENTERPRISE



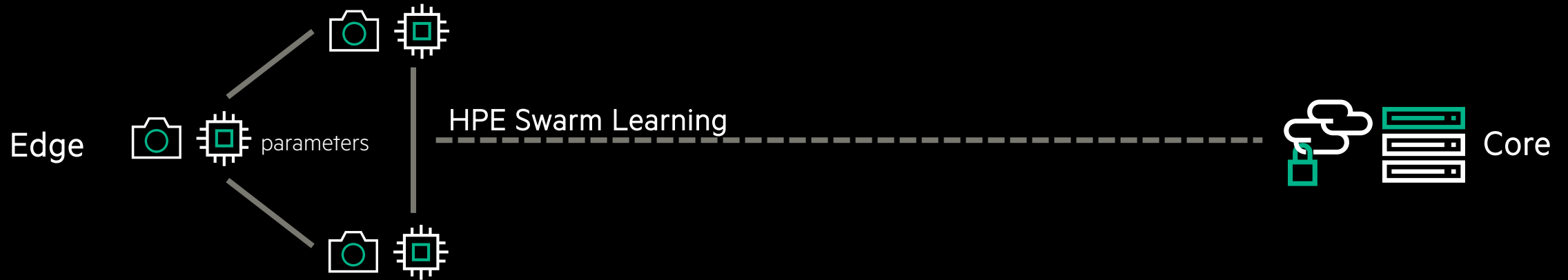
CHALLENGES IN GATHERING DATA AND TRAINING MODELS



 Low efficiency	Multiple sites send raw data over the network; need high bandwidth
 Lack of Data Privacy	Privacy acts like GDPR prevent moving data to a central datacenter/cloud
 Lack of Collaboration	Data generated in silos (e.g. data centers, sensors, vehicles)
 Biased Data	Data biases due to demographic distribution
 Lack of Monetization Framework	Data is new currency – owners look for ways to monetize the data

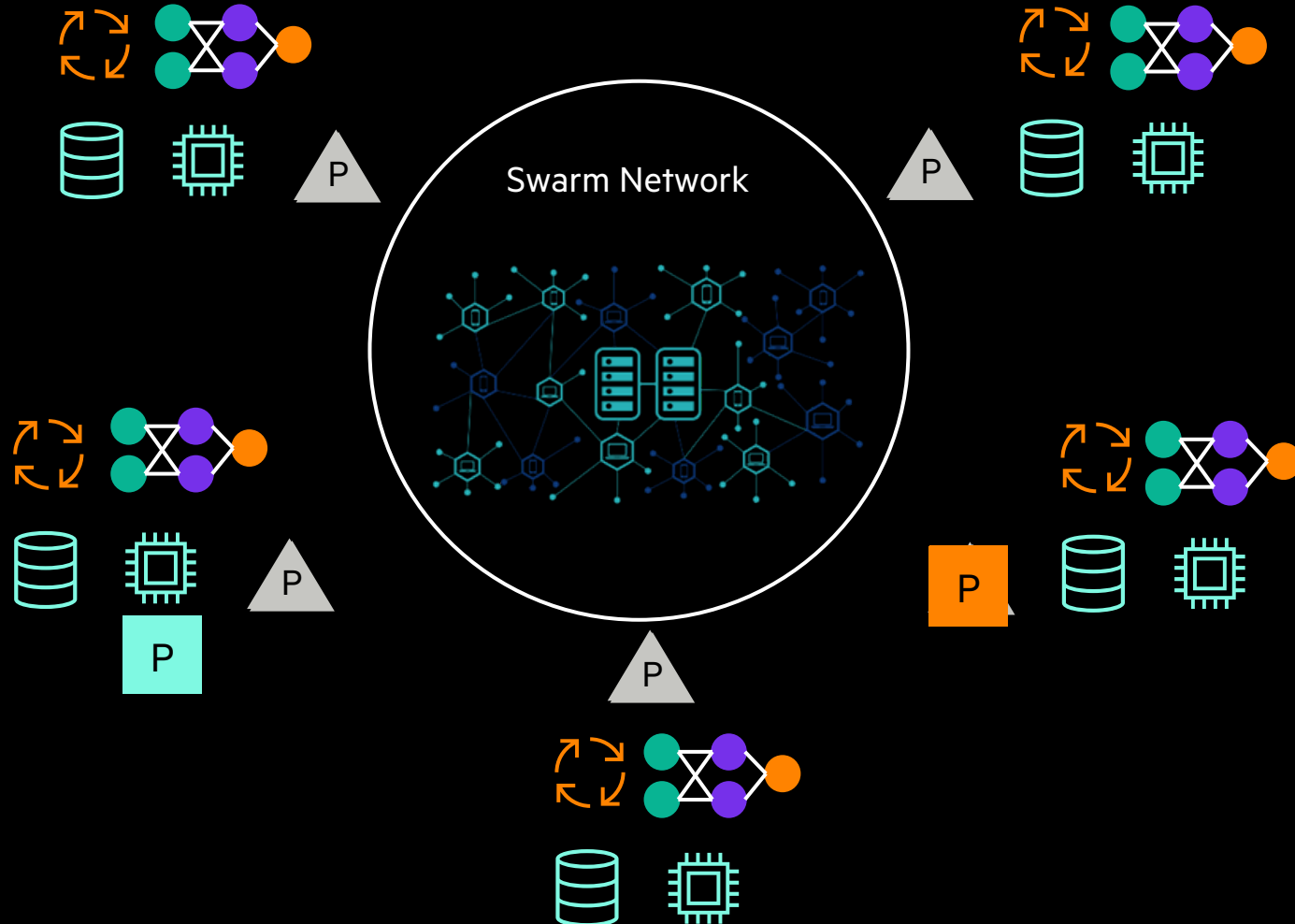
HOW DOES HPE ADDRESS THESE CHALLENGES? – SWARM LEARNING!

- Turn your distributed data into competitive edge



- Collaborative machine learning without centralized training data
- Model training at Edge devices; Learned parameters are merged at Edge network
- Data does not move out of the Edge – ensures privacy
- Built-in monetization support

SWARM LEARNING—PROCESS FLOW



- 1. Register**
Nodes register to Swarm Network and receive ML model
- 2. Train**
Nodes train the model on local data for a time-window (epoch)
- 3. Merge**
Nodes share and merge the trained models
- 4. Repeat**
Repeat 1 & 2 till desired accuracy is achieved





THANK YOU

For more information:

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