

# HOW THE BMW GROUP VISUALIZES AND INTERACTS WITH EXTREME DATASETS WITH NEAR ZERO LATENCY.

GTC 2019 - SAN JOSÉ, CA



Caroline Persson

**BMW  
GROUP**

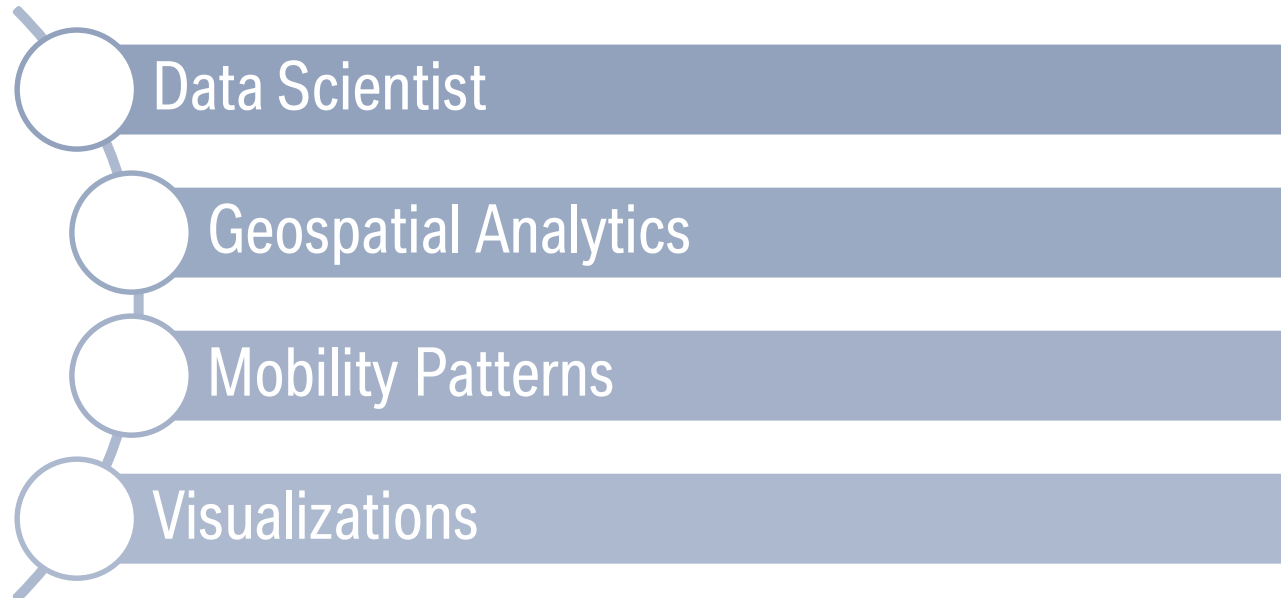
THE NEXT  
100 YEARS



# INTRODUCTION



**Caroline Persson**  
@bmwgroup.com



# OUR AGENDA FOR TODAY.

**1** **Intro:** Data Science at the BMW Group

**2** **Data Source:** The Potential of Connected Vehicles

**3** **Use case:** Automated Parking and OmniSci

# THE BMW GROUP IN NUMBERS (2018).

**129,932**

employees worldwide

**98.7 Billions**

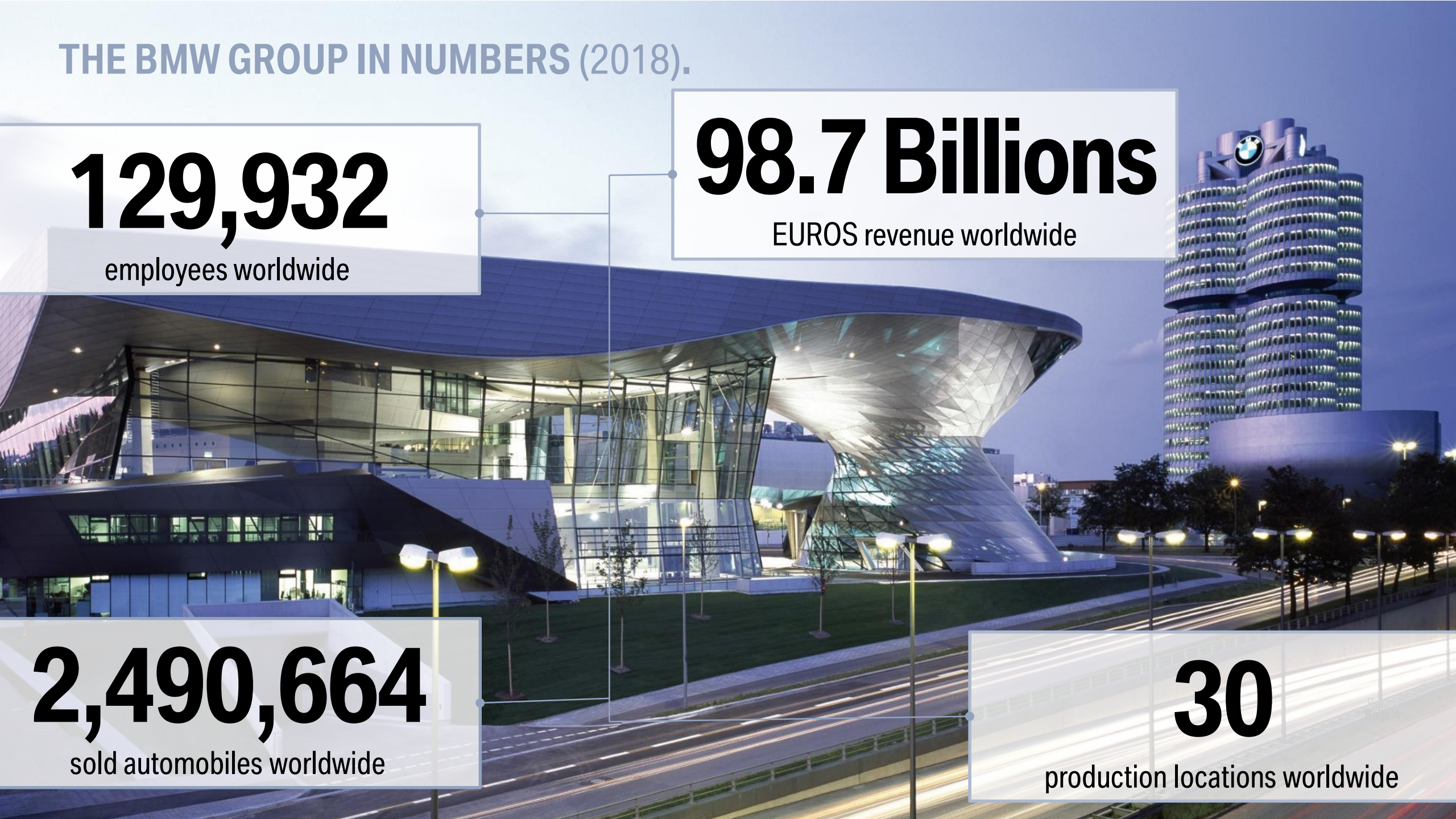
EUROS revenue worldwide

**2,490,664**

sold automobiles worldwide

**30**

production locations worldwide



**DATA LAKE: BREAKING UP DATA SILOS ACROSS THE COMPANY.**

**CUSTOMER**

**PRODUCTION AND  
LOGISTICS**

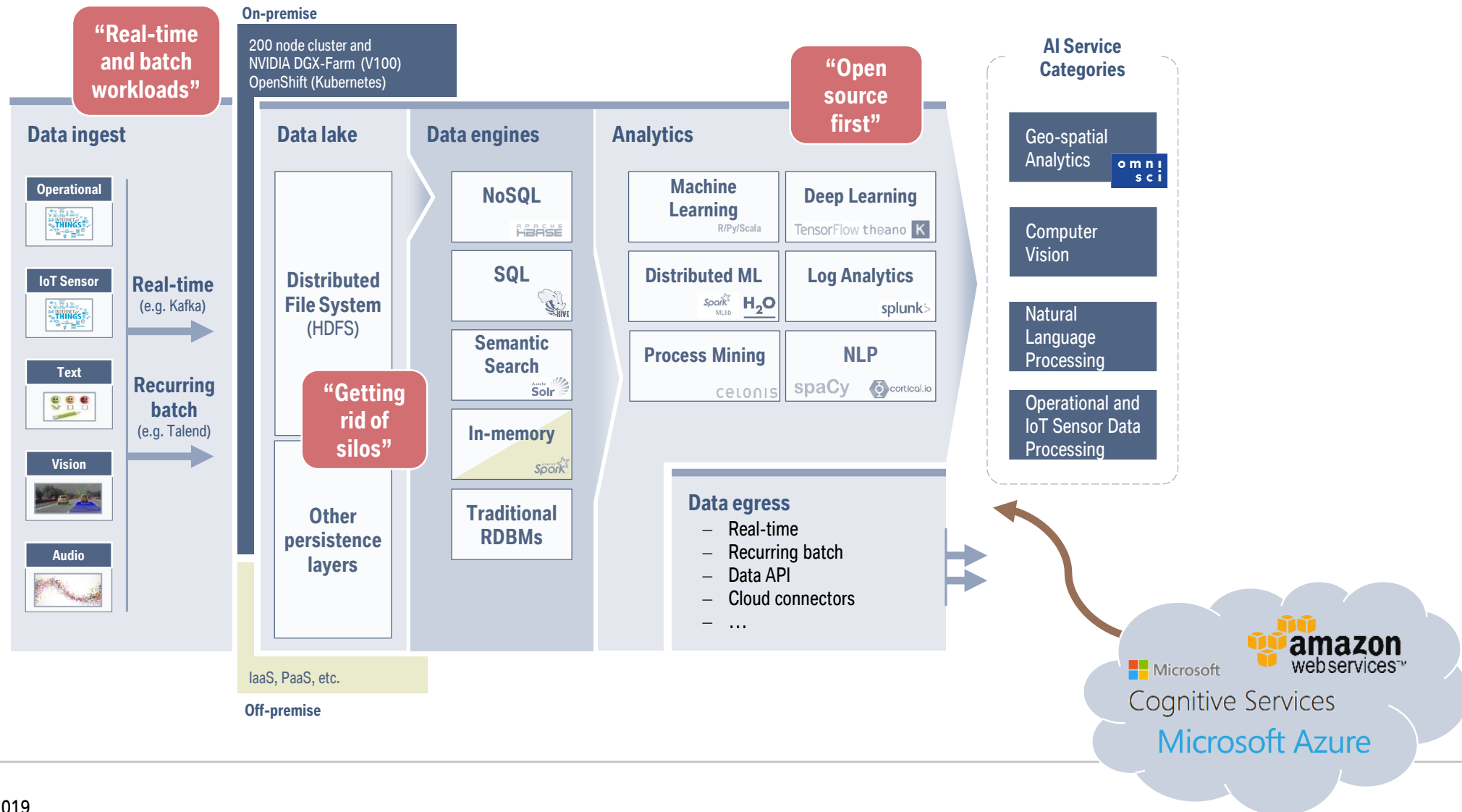
**VEHICLE  
DEVELOPMENT**

**CONNECTED CAR**

**OTHERS**

# ANALYTICS STACK.

## TRADITIONAL HADOOP PLATFORM + NICHE PROCESSING.



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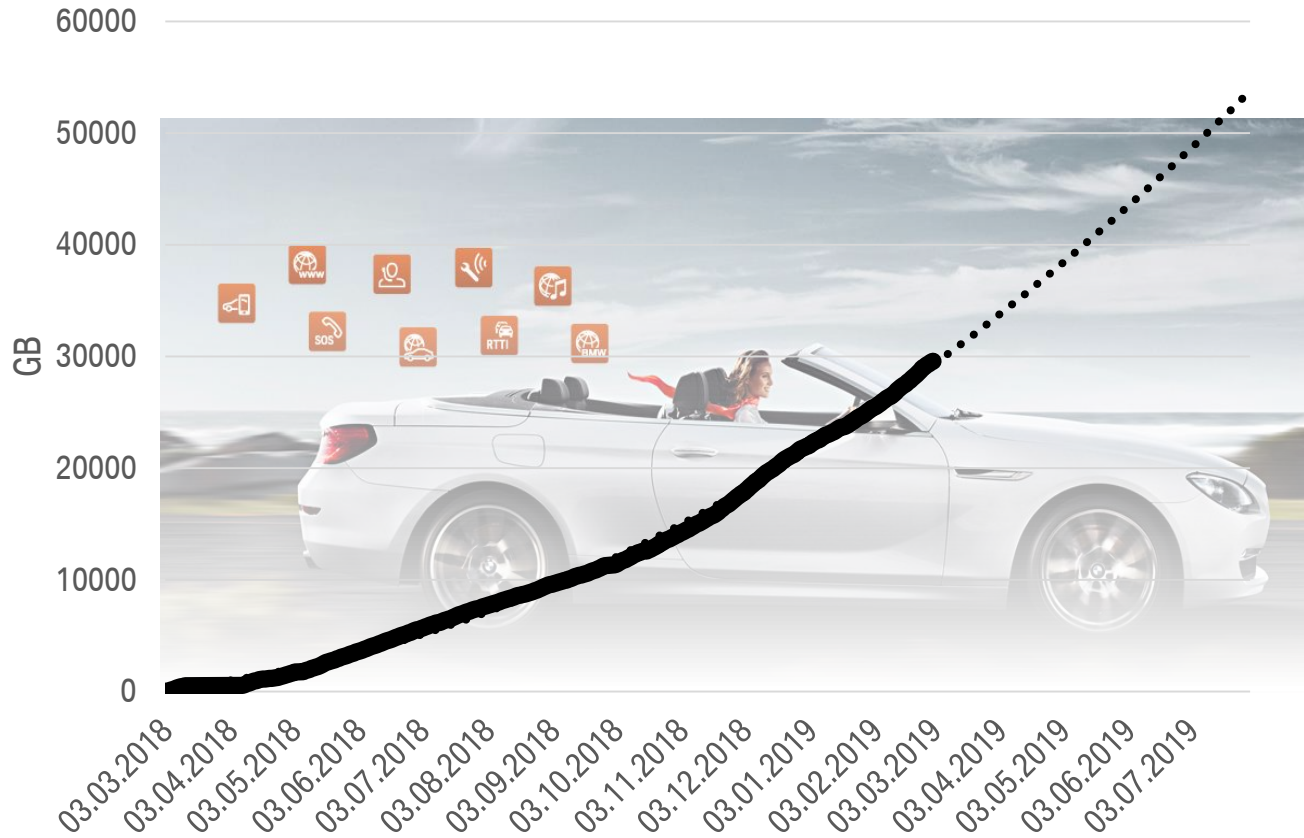
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2 **Data Source:** Connected Vehicle Data

3 **Use cases:** Automated Parking and OmniSci

# CONNECTIVITY.

## ConnectedDrive Data Source Example



GTC San José | 2019

**12 Mio**  
Connected Drive Cars

## 46 Connected Drive Markets

”

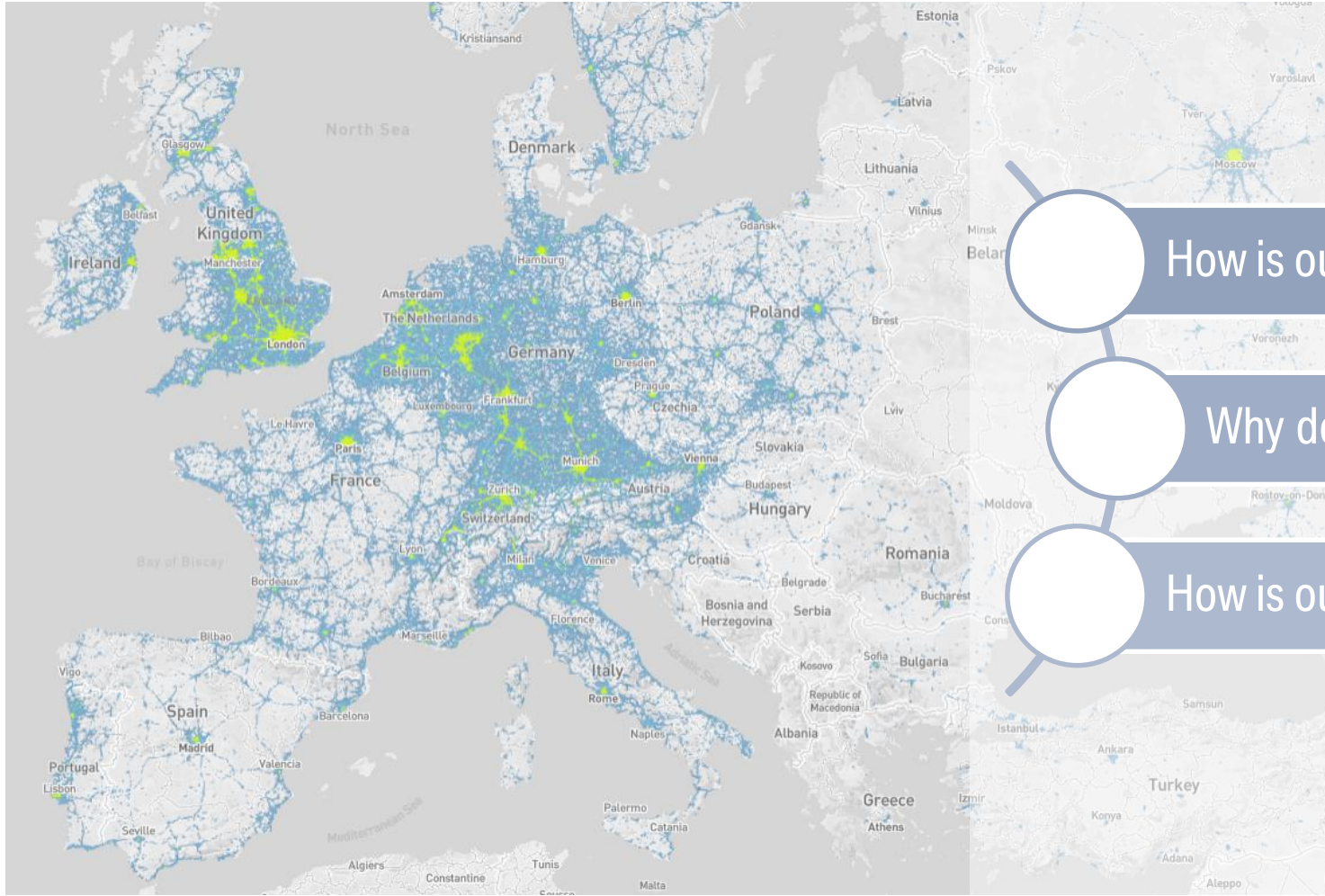
“Connected car”

describes a car equipped with communication technology that allows for the direct flow of data to and from the car, without the need for a mobile device

“



# MONITORING AMOUNT OF DATA IS NOT ENOUGH



How is our road coverage over longer time?

Why do we see unexpected patterns in data volume?

How is our data geographically distributed?

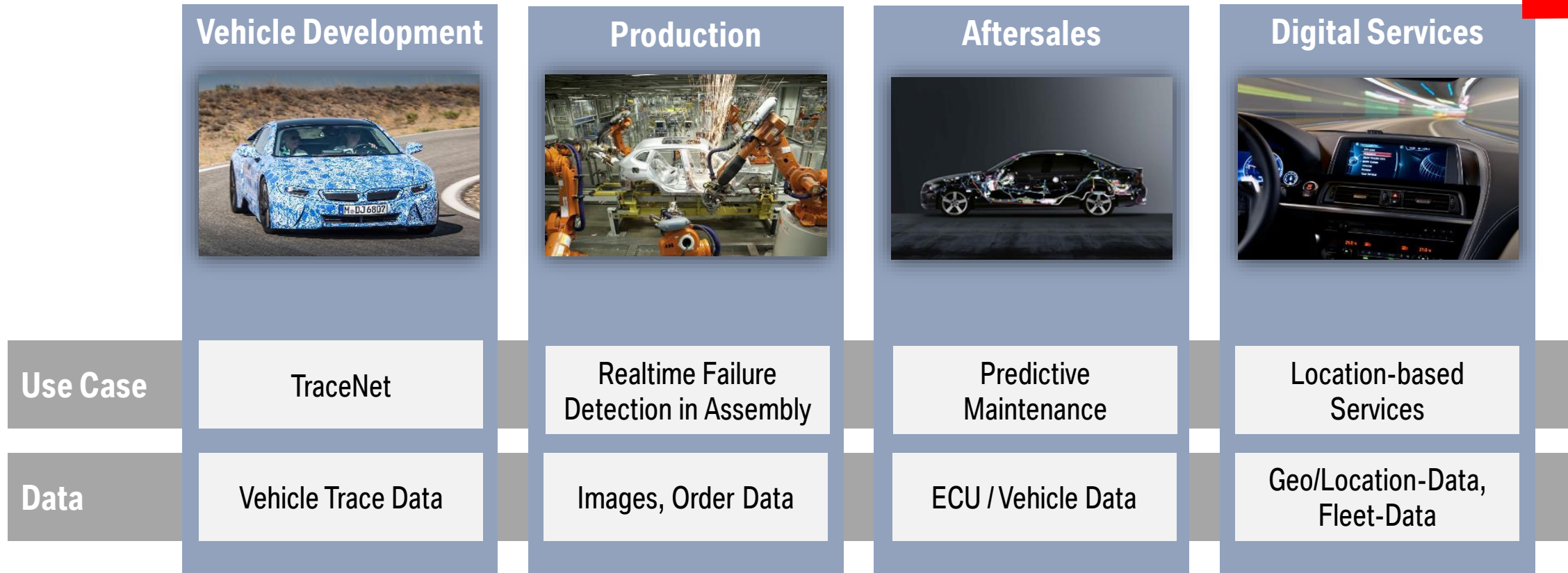
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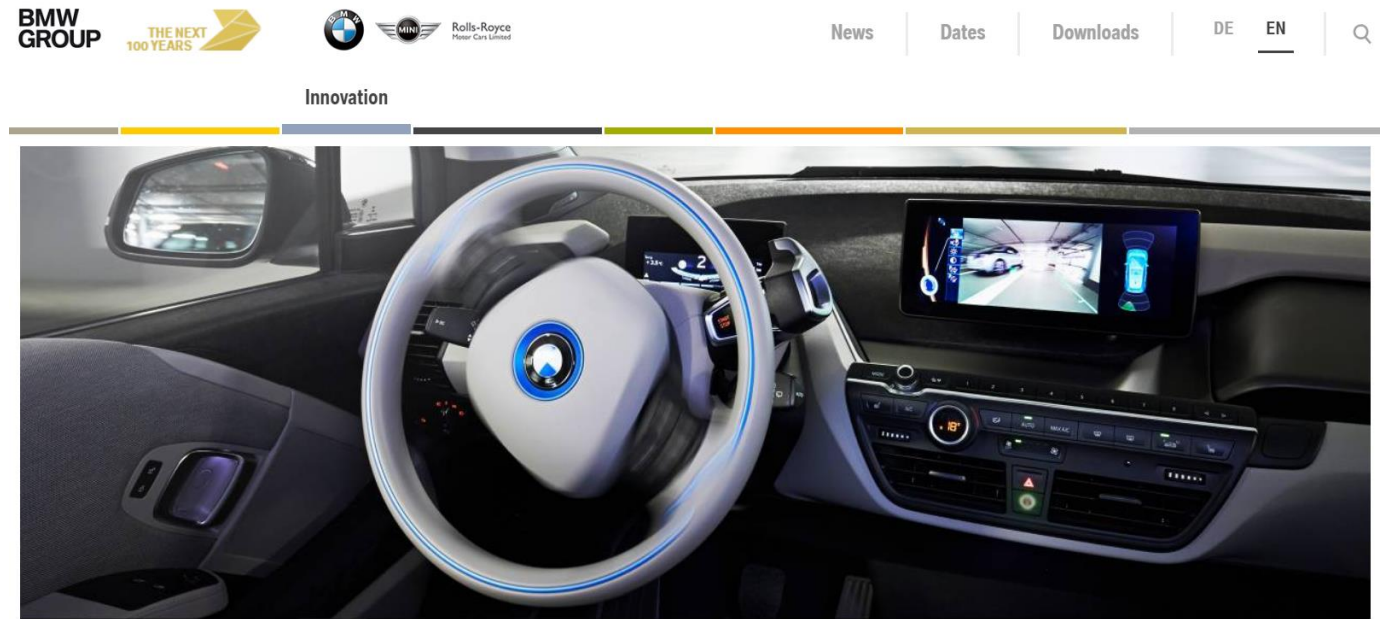
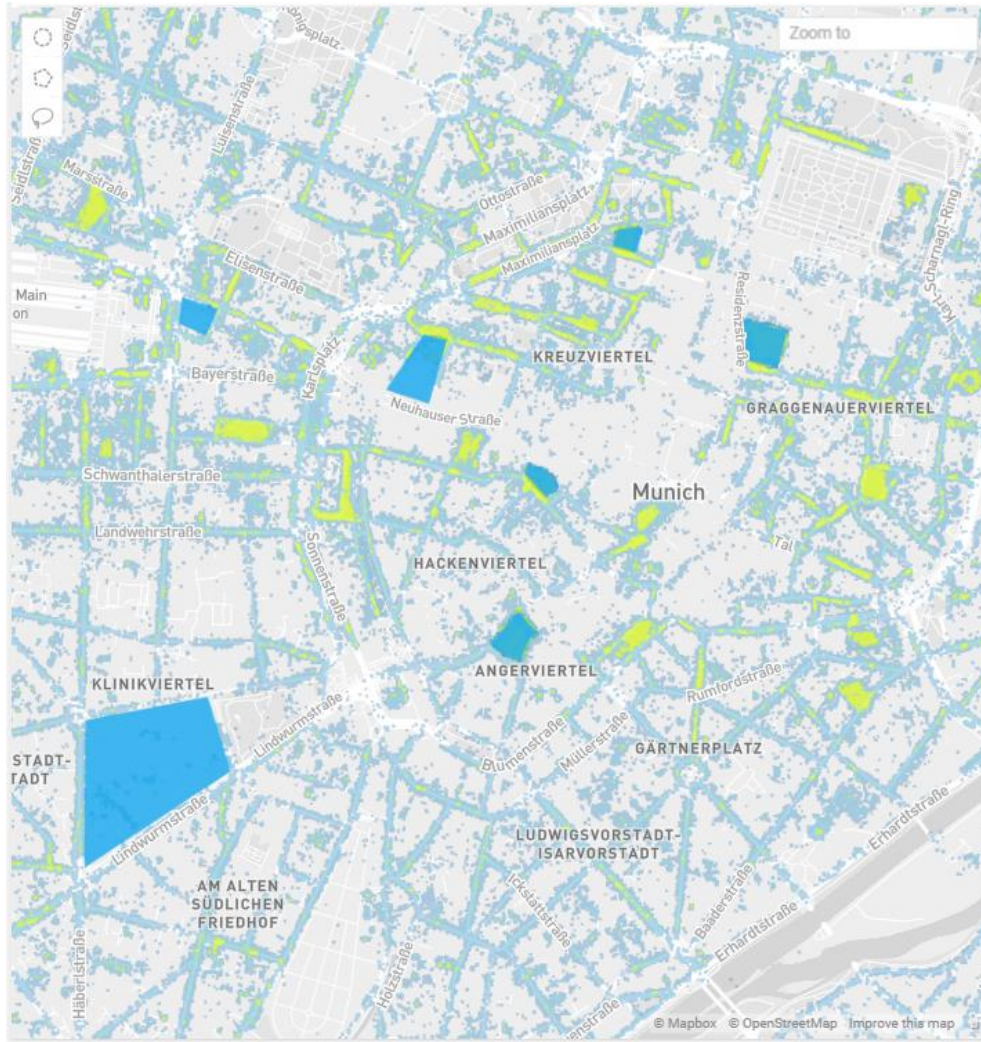
**2** **Connected Vehicles:** The Potential of Connected Vehicles

**3** **Use cases:** Automated Parking and OmniSci

# BUSINESS PROCESSES USING ADVANCED ANALYTICS AND MACHINE LEARNING



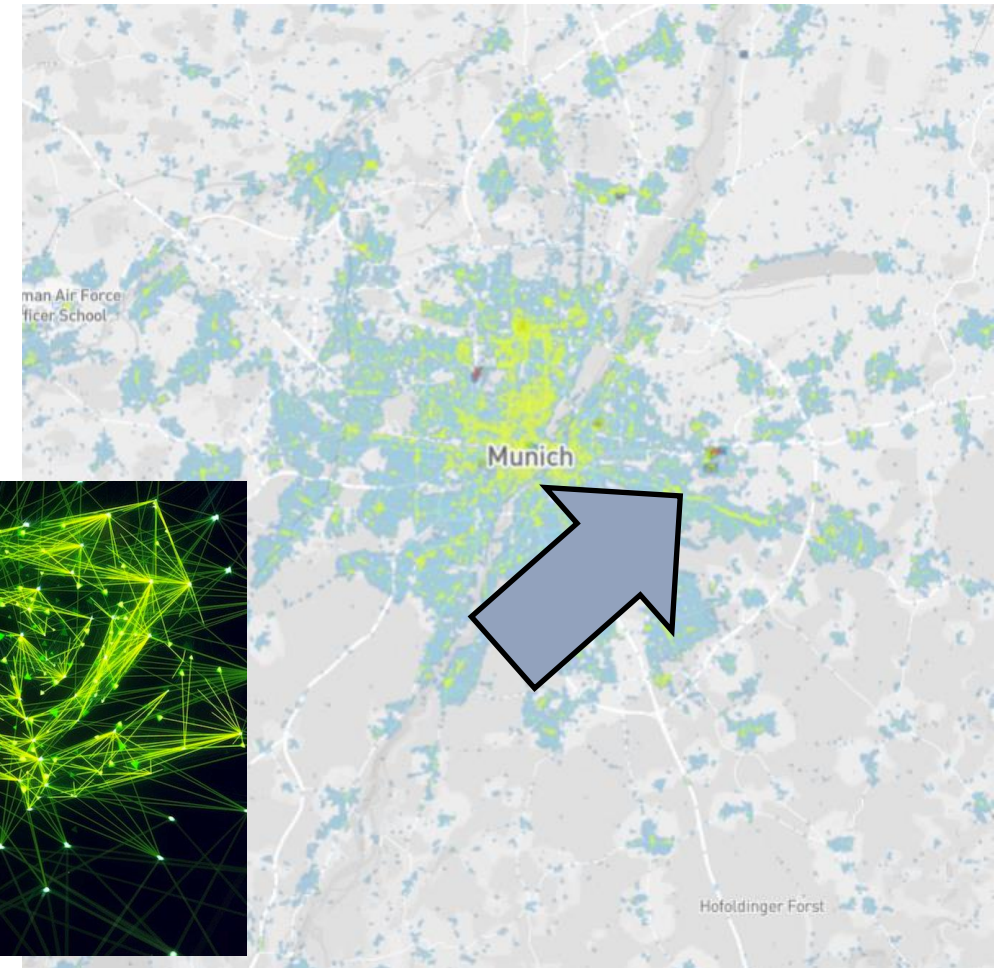
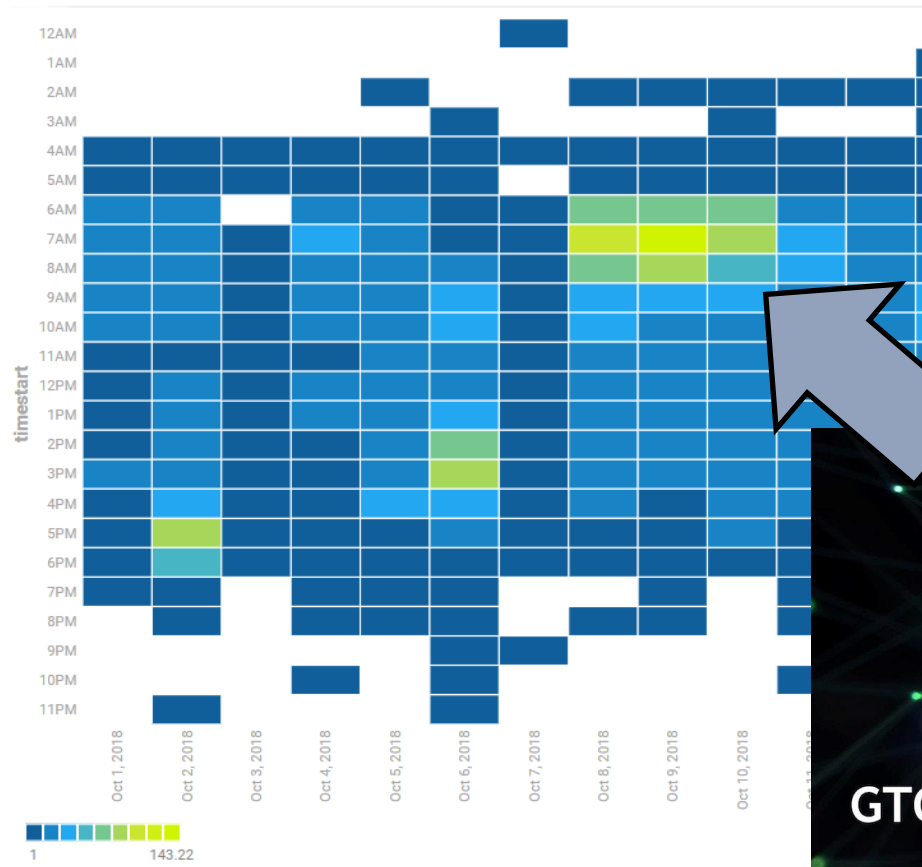
# DEMO: PRODUCT STRATEGY FOR AUTOMATED VALET PARKING



## Automatic car-park parking.

For fully-automated parking in a multi-storey car-park, four laser scanners scan all the areas around the vehicle and generate an accurate image of the surroundings. The fully-automated Remote Valet Parking Assistant links this information with a digital plan of the car-park and is then able to use this data to drive the BMW i3 – independently, dynamically and safely – to an empty space and park it.

# GTC 2018



You're either connected or you're not.



The Ultimate  
Driving Machine

BMW  
ConnectedDrive

[bmw-connecteddrive.com](http://bmw-connecteddrive.com)



**Caroline Persson**  
[@bmwgroup.com](mailto:@bmwgroup.com)