

# INFRASTRUKTUR: VOM ZENTRUM AN DEN RAND?

Lars Bruné

Experten-Roundtable über "Cloud-to-Edge" am 23.11.23, 12.00-18.00, im NRW Blockchain  
Reallabor in Hürth



# AGENDA

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1. Define the Edge
2. Challenges on the road to the edge
3. We did it – example cases
4. Action

# 70%

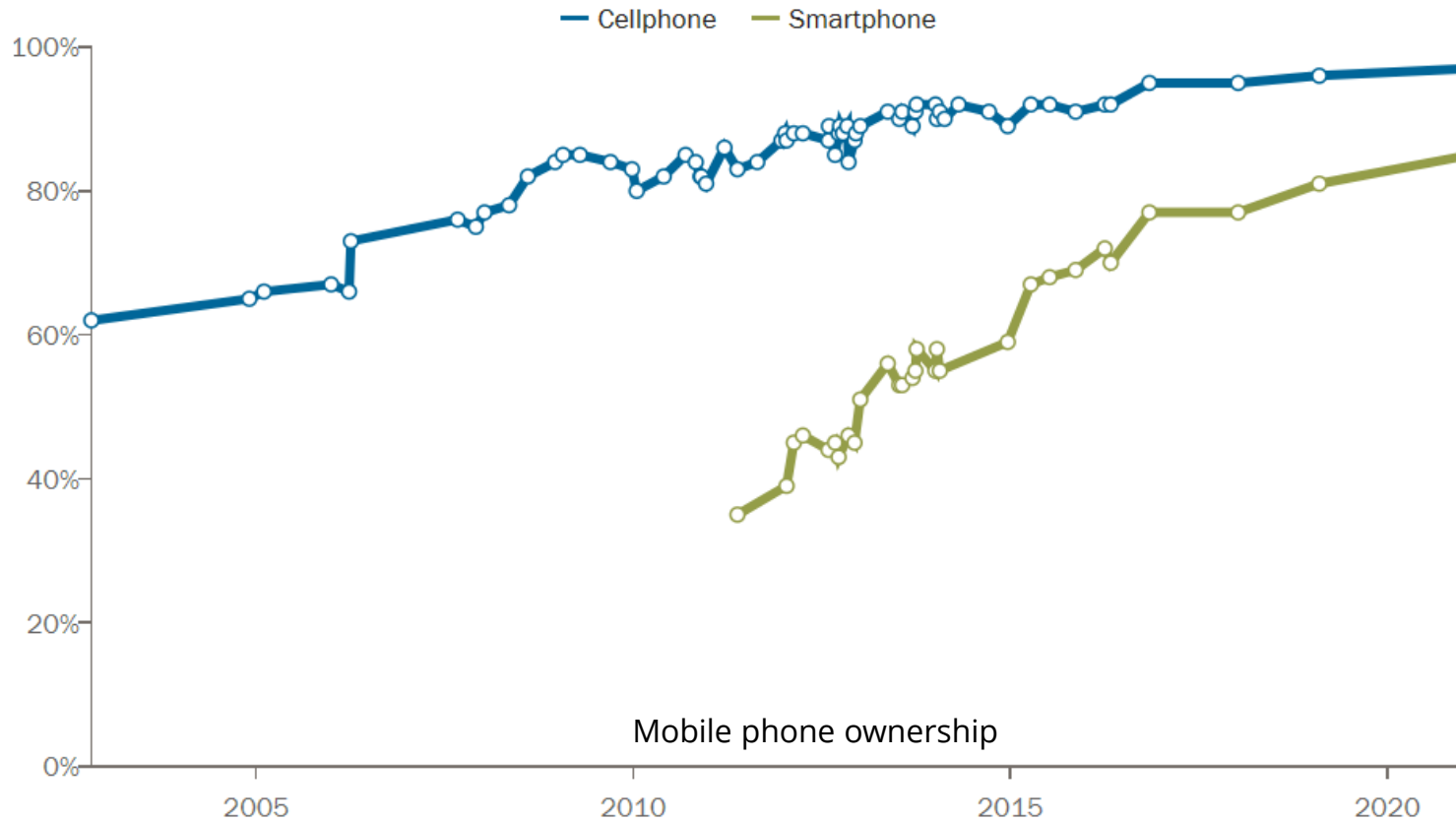
Enterprise-generated data will be  
created and processed at the Edge by 2025\*

*\* Gartner Inc.,  
"What Edge Computing Means for Infrastructure and Operations Leaders"  
October 3, 2018*

# Edge - really something new?

Local compute in the hands of 80%+ adults

*% of U.S. adults who say they own a ...*



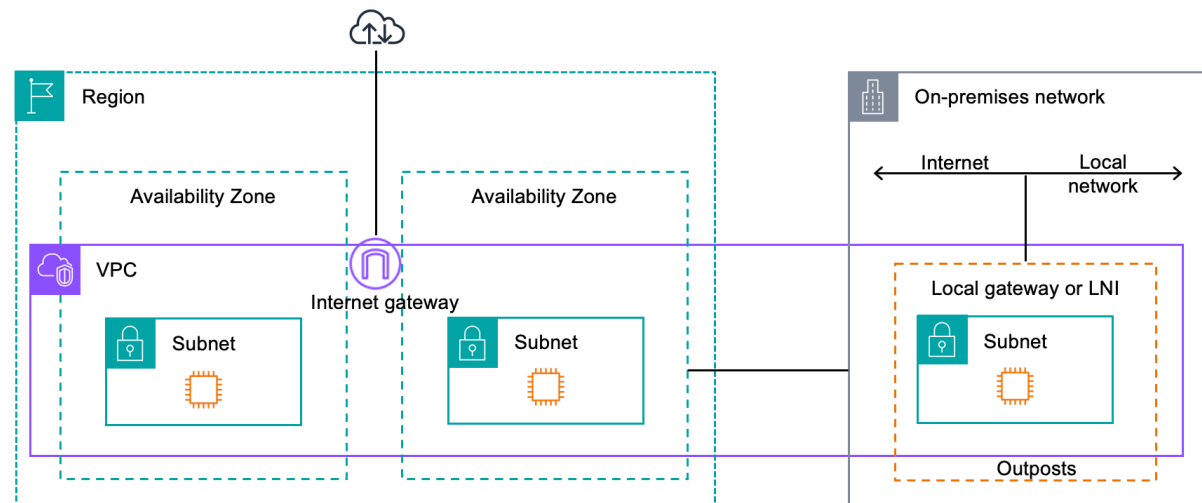
PEW Research center, <https://www.pewresearch.org/internet/fact-sheet/mobile/>

# Hyper scaler business – going to the edge ...

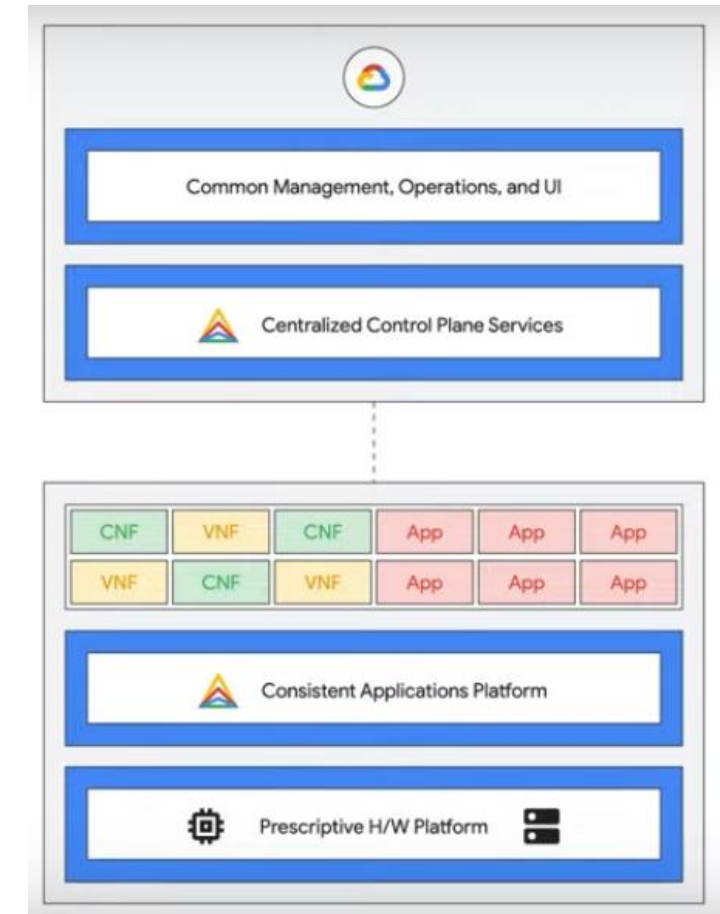
... to get back to the Cloud

## AWS Outposts Family

Run AWS infrastructure and services on premises for a truly consistent hybrid experience



<https://docs.aws.amazon.com/outposts/latest/userguide/how-outposts-works.html>  
<https://cloud.google.com/distributed-cloud/edge/latest/docs/how-it-works>



# Cloud computing means

Cloud like experience ... on the edge



Quick spin-up



On demand



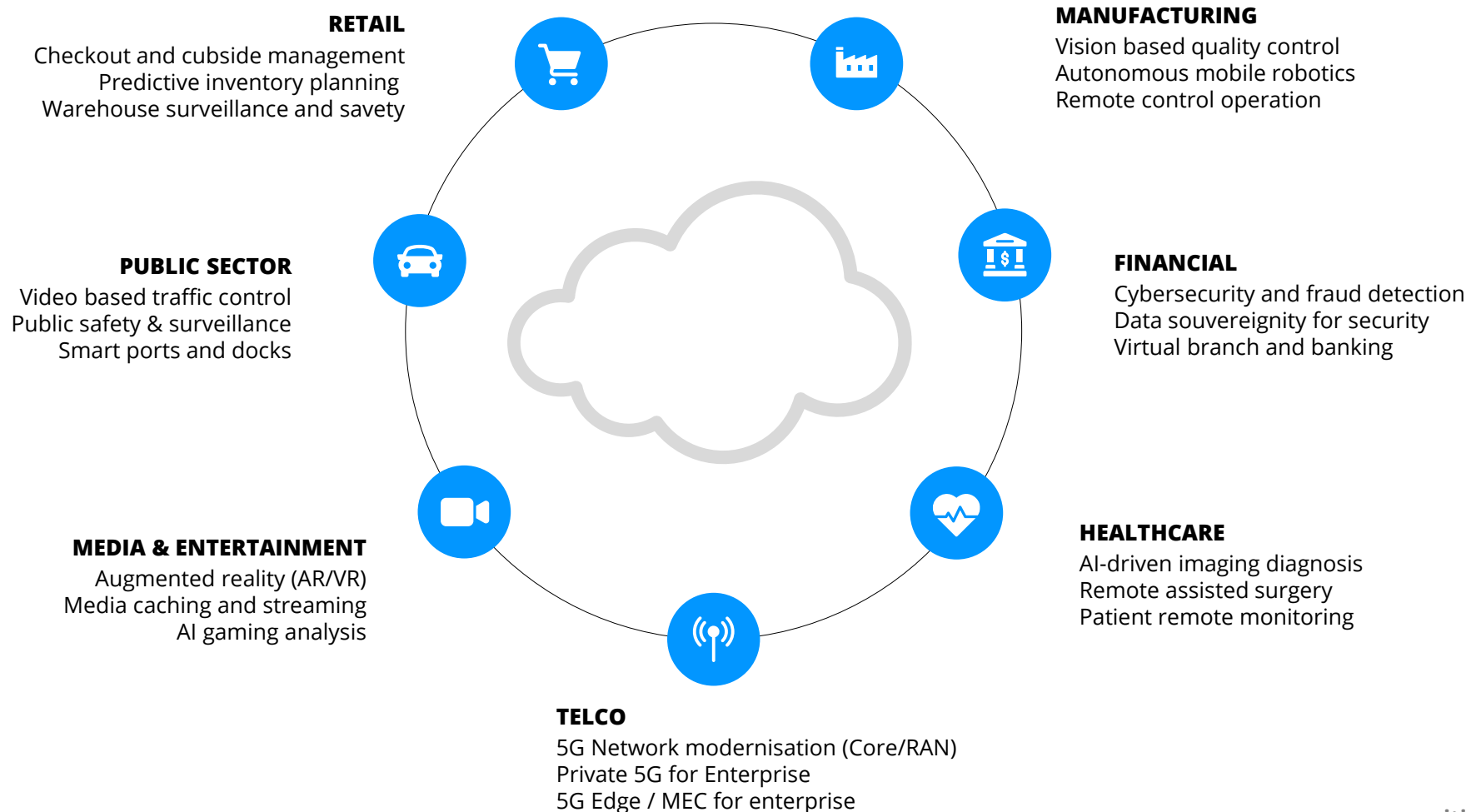
Easy operation



Scalability

# New applications on the edge

Local Cloud computing – proximity enabling new applications





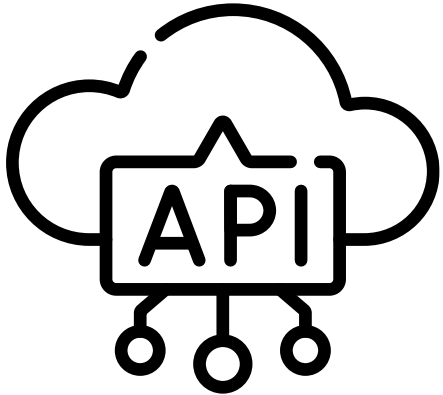
A perspective view of a road covered in speed bumps, receding into the distance under a cloudy sky. The road is flanked by trees and bushes. The speed bumps are white and black, creating a strong visual rhythm. The sky is filled with soft, white clouds, and the horizon is hazy. The overall mood is one of a long, arduous journey.

**GETTING THERE  
WITHOUT HYPER  
SCALERS?**



# **CHALLENGE 1: CONSUME-ABILITY**

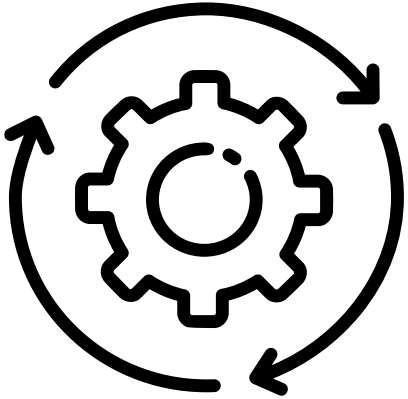
... as a Service



The existence of accessible documentation, functions and procedures allowing the creation of applications.

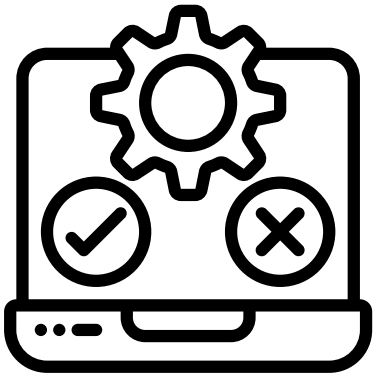
## **CHALLENGE 2: AUTOMATION**

...for scalability



- a) Containers to move workloads easily and run anywhere.
- b) Software driven management of bare-metal.

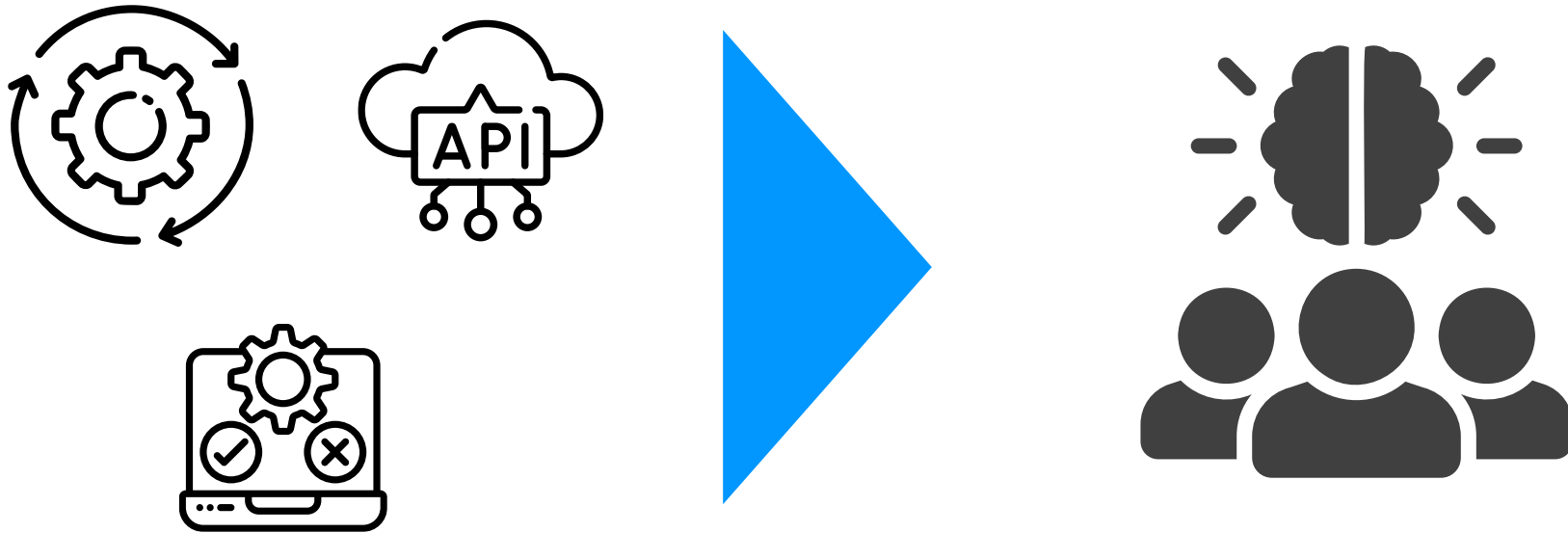
## **CHALLENGE 3: CONNECTIVITY/RELIABILITY**



Independent operation to minimize the necessity for human oversight. This needs automated testing to ensure consistent performance.

# Summary: Software to run consumable platform

... not only in core but also on the edge



Cloud-to-Edge requires people and skills.

# Where we did it ... market data processing

Low Latency ...



# Building the Low Latency Cloud Native Platform



**Containers Everywhere:** Consistency & Efficiency



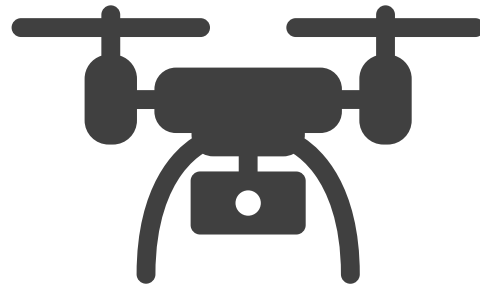
**Integration of Components:** Seamless Functionality



**Continuous Testing:** Meeting Low Latency SLAs



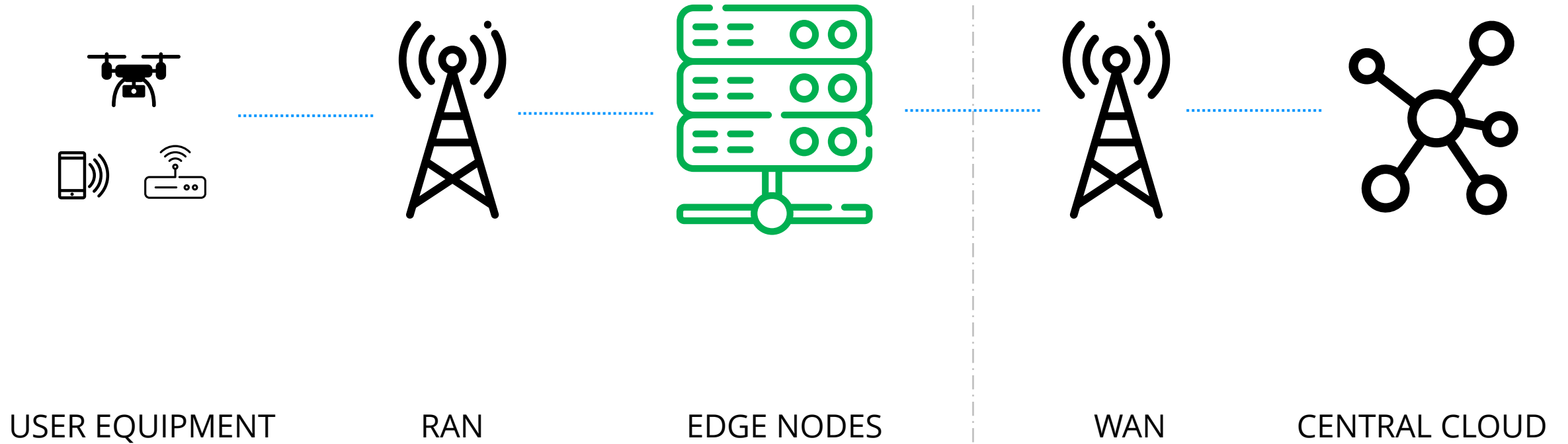
# 5G – WHERE WE DID IT



Itamoro, 5hine,  
MultiNet6G:  
ATV Projects

# P5G: THE CORE IS AT THE EDGE

Moving functionality to the edge



# ACTION

... start building “as a Service”



Team up



Software engineering and evolutionary architecture



Build the Cloud



# **WRAP UP + Q&A**

**THANK YOU,  
LET'S KEEP IN TOUCH!**

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**WELCOME**



## New industry use cases are driving demand for distributed cloud

