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# challenges of the 50B connected devices

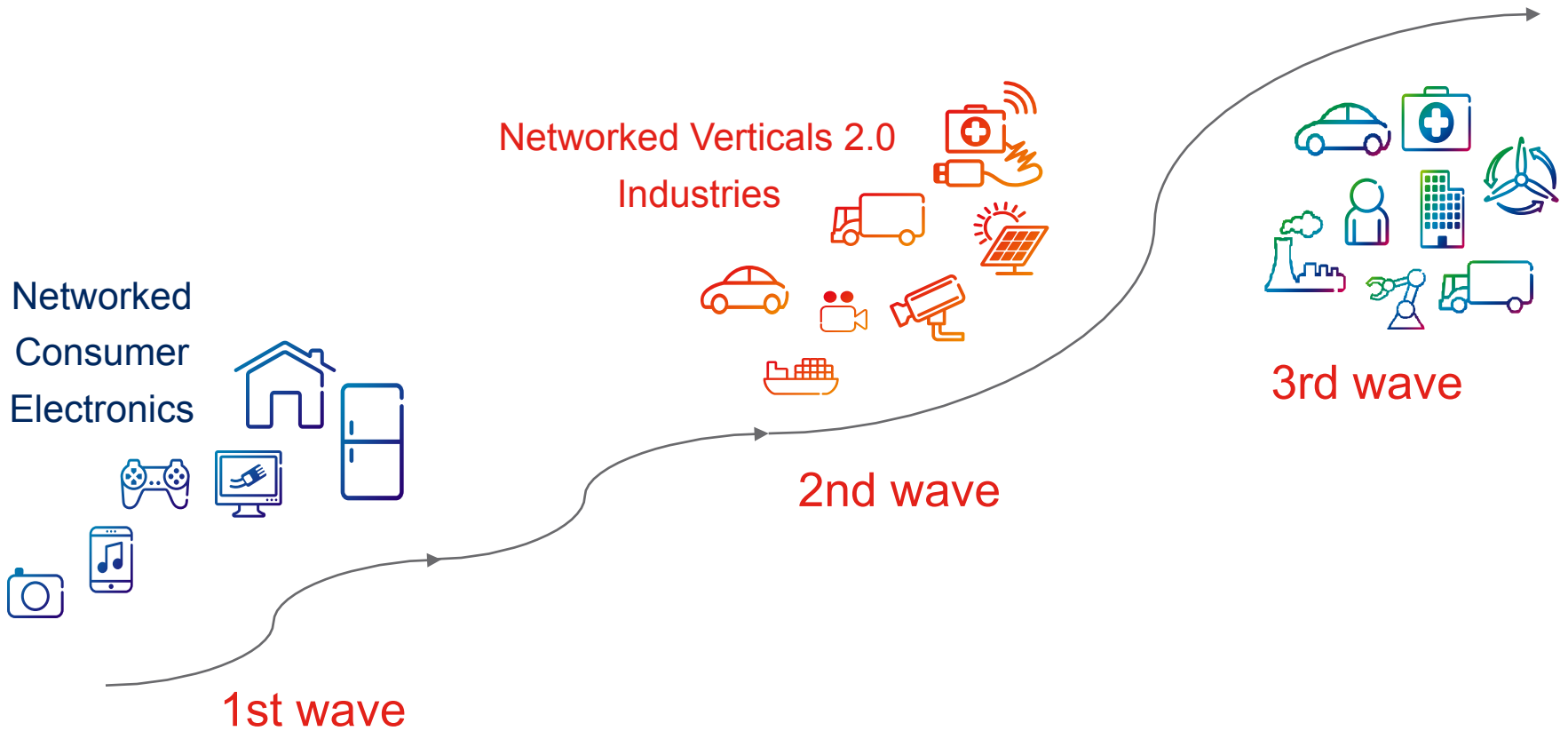
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# Vision 2020



50 BILLION  
CONNECTED  
DEVICES  
&  
the reality of  
M2M

# 3 waves of connected devices



# Machine-Type Communication



## Massive MTC

Low cost  
Low energy  
High coverage  
Small data volumes  
Massive numbers of devices

- › Low protocol overhead
- › Scalable Access
- › ...

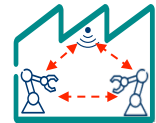


Sensors, actuators

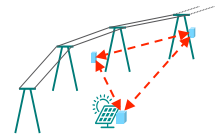
Ultra reliable  
Very low latency  
Very high availability

## Critical MTC

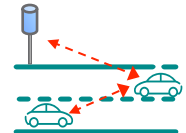
- › ms-level latency
- › Robust transmission
- › Fast channel assignment
- › Multi-level diversity
- › ...



Industrial applications



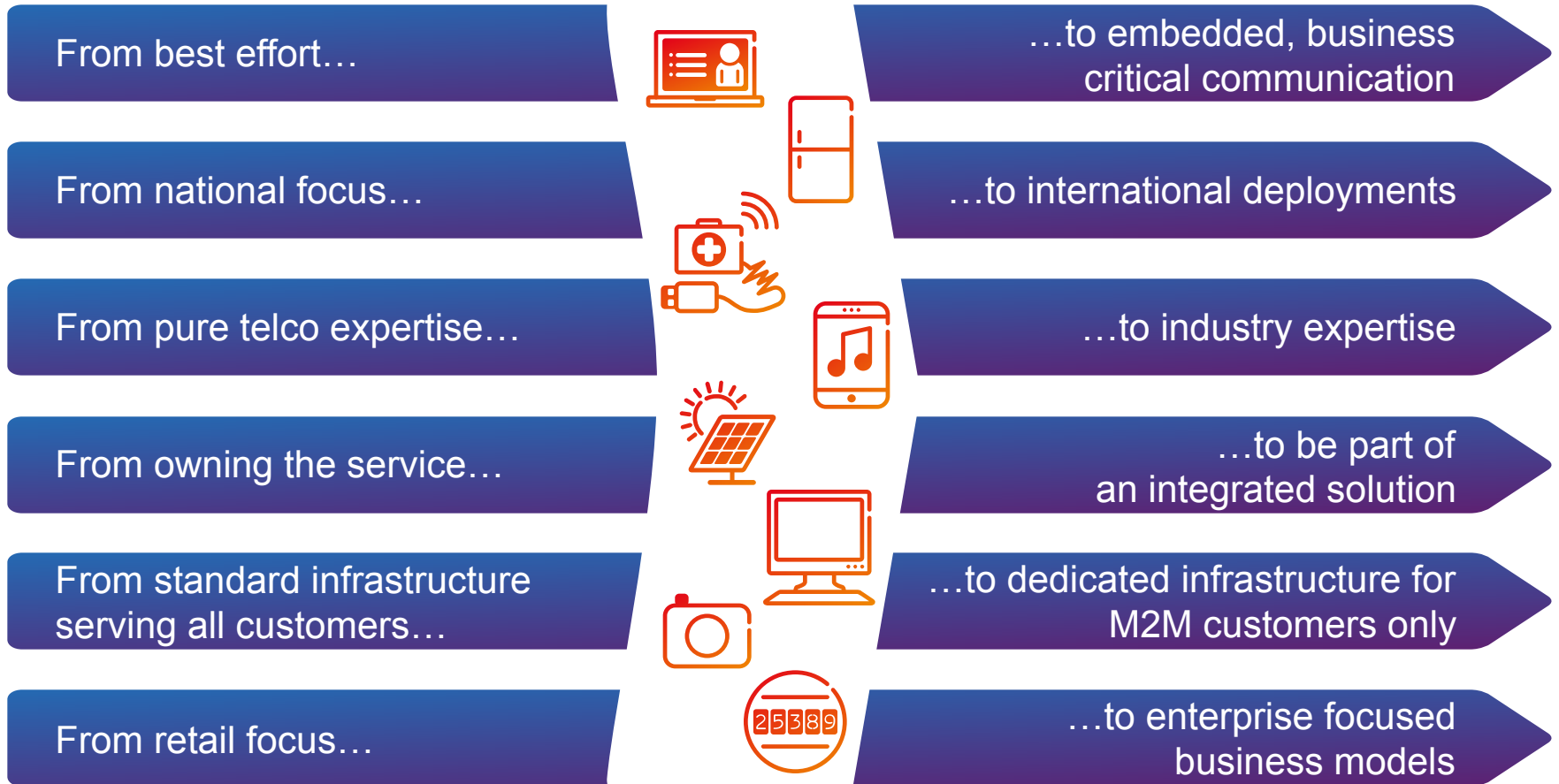
Smart grid



Traffic safety/control



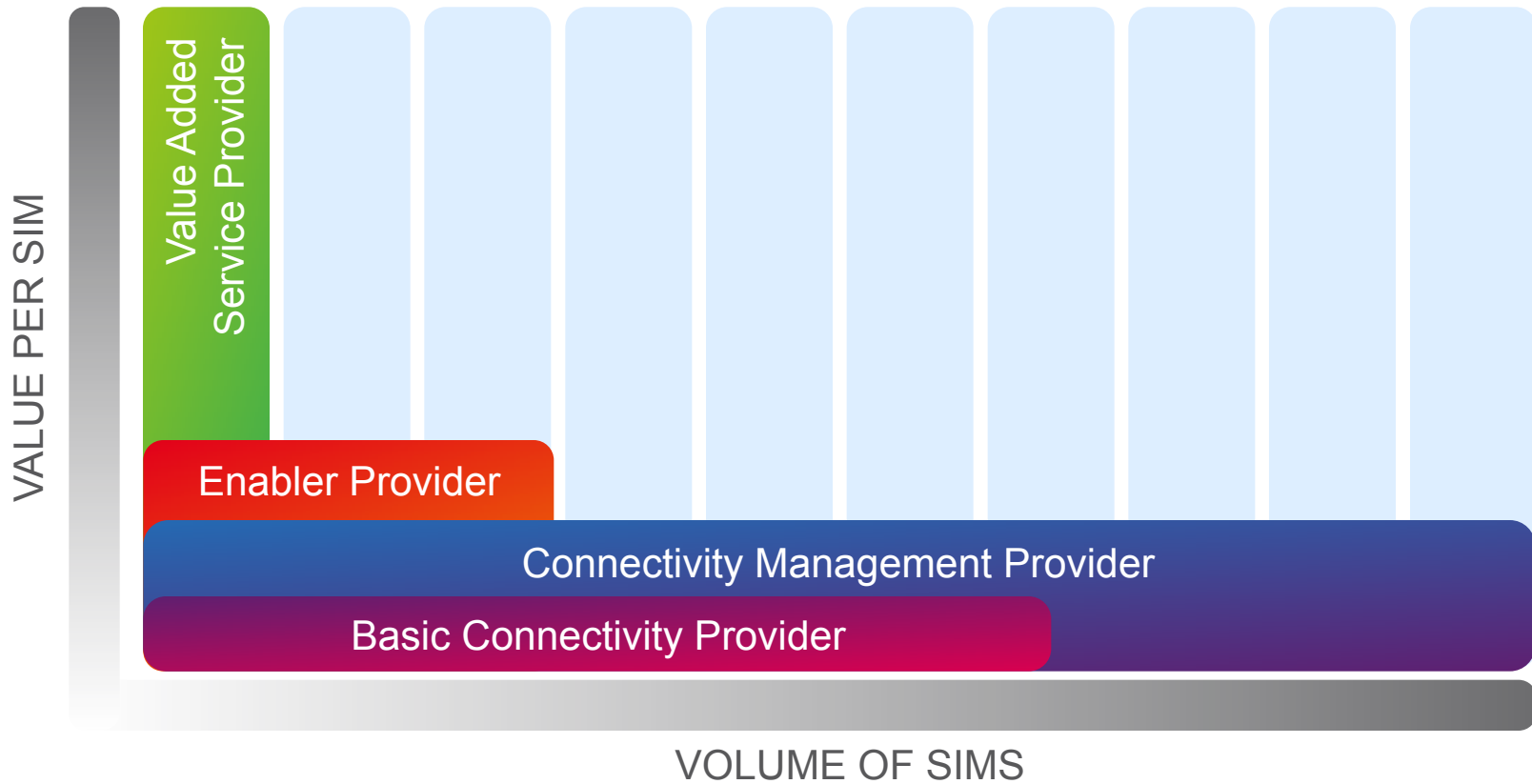
# M2M is a different business



# roles and positioning



ILLUSTRATIVE



# Key M2M challenges



Low ARPU

SIM management

Access to provisioning

Charging management and control

Time to Market

Software and database licenses

Telecom authority licenses



# Deployment models



## Operator owned solution

- Reuse of existing e2e network infrastructure
- Full control over the solution
- Expand NW as required
- Open network interfaces to business partners
- Dedicated security solutions
- License expansion
- E2e service development in house
- Extensive local project throughout the lifetime of the solution
- How to reach TTM targets?

## XaaS

- Keep M2M completely separated from core voice and data services
- Reuse only the access network
- Connectivity management service provided from the cloud
- Purchase capacity in the cloud according to business uptake
- Customized interface from the cloud service to the business partners
- No compromise on security
- Limited local project
- Fast TTM
- Focus on value added extensions





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