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# TRANSFORMING TO NETWORKED SOCIETY



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# MARKET OUTLOOK



PREDICTED  
IoT CONNECTED  
DEVICES IN 2021



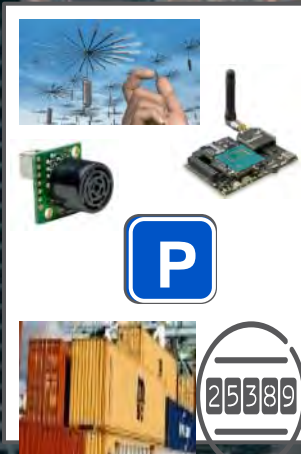
# 5G USE CASES



Broadband  
experience  
everywhere  
anytime



Mass market  
personalized  
media and  
gaming



Meters and  
sensors,  
“Massive MTC”



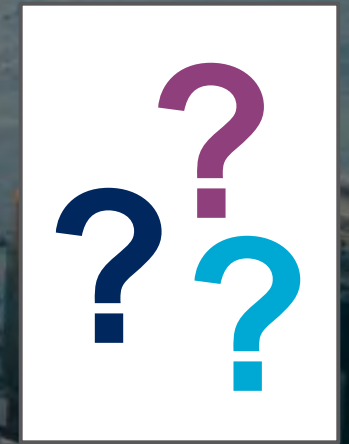
Remote  
controlled  
machines



Smart  
Transport  
Infrastructure  
and vehicles



Human  
machine  
interaction



And much  
more

Multiple use-cases supported by a common network platform



# WE ARE AT THE BEGINNING OF SOMETHING BIG



**\$1.9**  
**TRILLION**

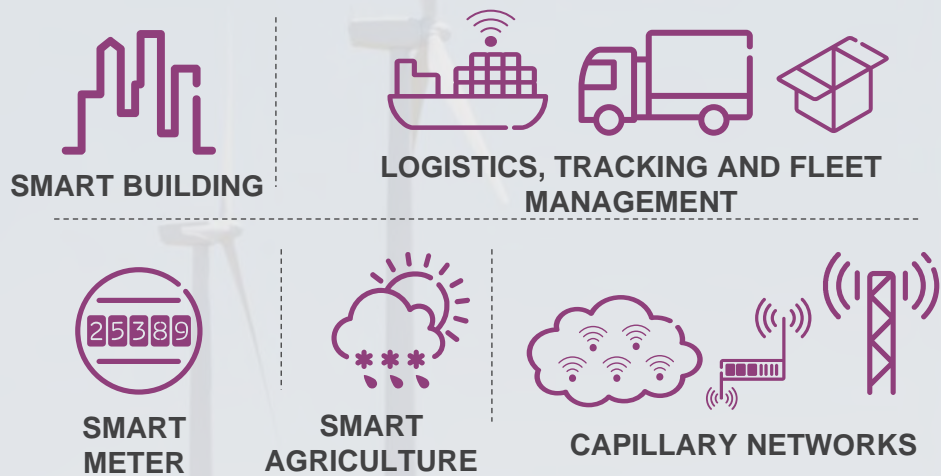
Predicted value-add of IoT  
across sectors in 2020

# IOT - WIDE RANGE OF REQUIREMENTS FOR 5G

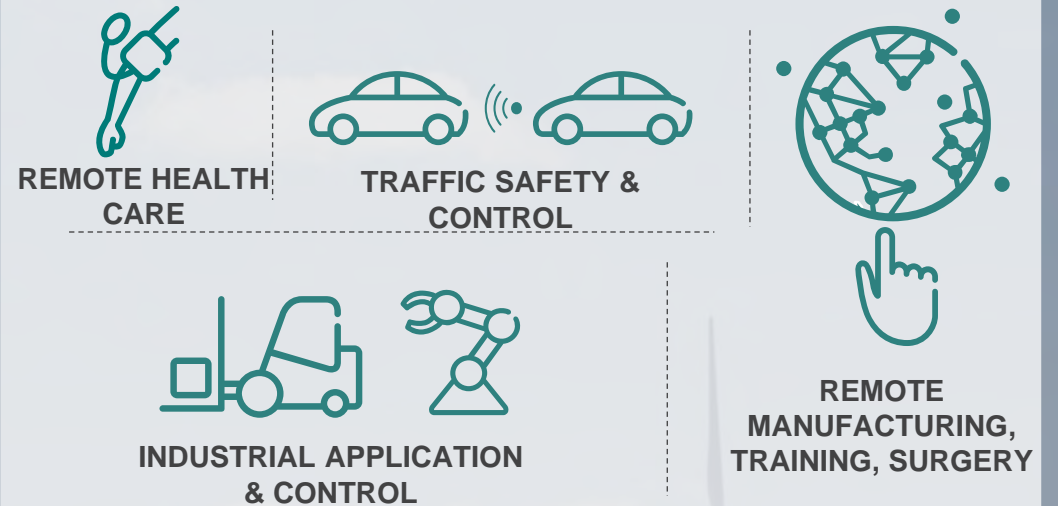
## AND SPECTRUM NEEDS.....



### MASSIVE MTC



### CRITICAL MTC



LOW COST, LOW ENERGY  
SMALL DATA VOLUMES  
MASSIVE NUMBERS

ULTRA RELIABLE  
VERY LOW LATENCY  
VERY HIGH AVAILABILITY



# THE CELLULAR FOUNDATION FOR IOT



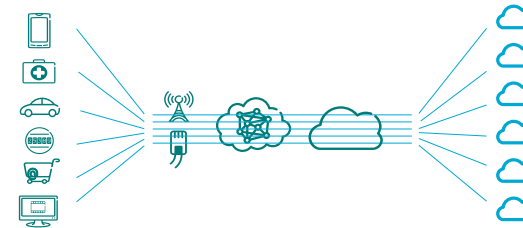
Radio Access

Core network

2G	EC-GSM
4G	LTE-M NB-IoT
5G	NX

+

Network Slicing



SCALABILITY



GLOBAL  
REACH



ECOSYSTEM



TOTAL COST OF  
OWNERSHIP



QUALITY OF  
SERVICE



SECURITY



# FULL RANGE OF SOLUTIONS

Addressing diversity of use cases

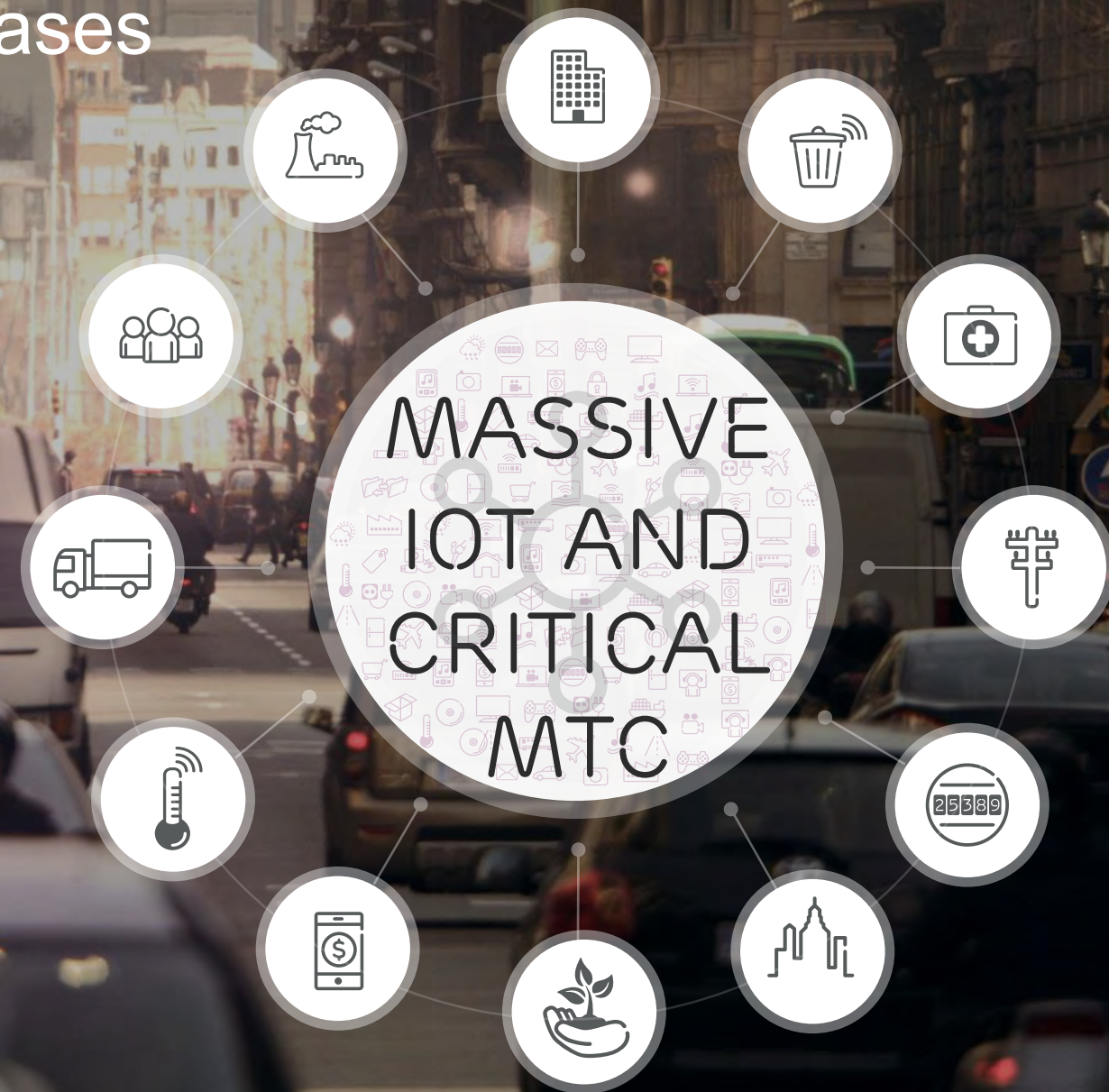


**EC-GSM** | Global cellular IoT for all GSM markets

**LTE-M** | Wide range of Massive IoT applications

**NB-IoT** | Low-bitrate Massive IoT applications

**5G NX** | Critical Machine-Type Communication





# LTE MODULE COST EVOLUTION



Widely deployed  
LTE will serve  
Massive IoT



Significantly reduced  
device complexity,  
functionality and  
capability, thus cost

CAT-4

100%  
3GPP Rel.8

CAT-1

-25%  
3GPP Rel.8

CAT-0

-60%  
3GPP Rel.12

CAT-M

-80%  
3GPP Rel.13

NB  
IOT

-90%  
3GPP Rel.13



# DEVELOPING POLICIES FOR HIGH QUALITY BROADBAND



- › Developing, formulating and implementing national broadband plans
- › Integrating national broadband plans with national digital economy strategies
  - Natural component in the national digital transformation agenda
- › Sustainable policy to key ICT issues and requirements



# 5G OPPORTUNITIES



Remote Service & Operations Center

Increased efficiency  
Ultra reliable & fast  
All 5G communication



Automated  
Platooning



Automated  
Mines



Intelligent  
Urban  
Distribution



# VIEWS ON IOT POLICY ASPECTS



- › The Internet of Things requires an innovation friendly policy approach. Long term development with current high pace of change.
- › Some views on basic guiding principles:
  - ❑ Support and allow for technology neutral approach
  - ❑ Recognize the global nature of digital and remain open to free circulation
  - ❑ Use existing, harmonised and horizontal legislation while also supporting various vertical market structures
  - ❑ Adopt simple and flexible rules for businesses and consumers
  - ❑ Encourage industry-lead standards
  - ❑ Involve all interested stakeholders in the development of policies

5G





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