



Mobile IoT

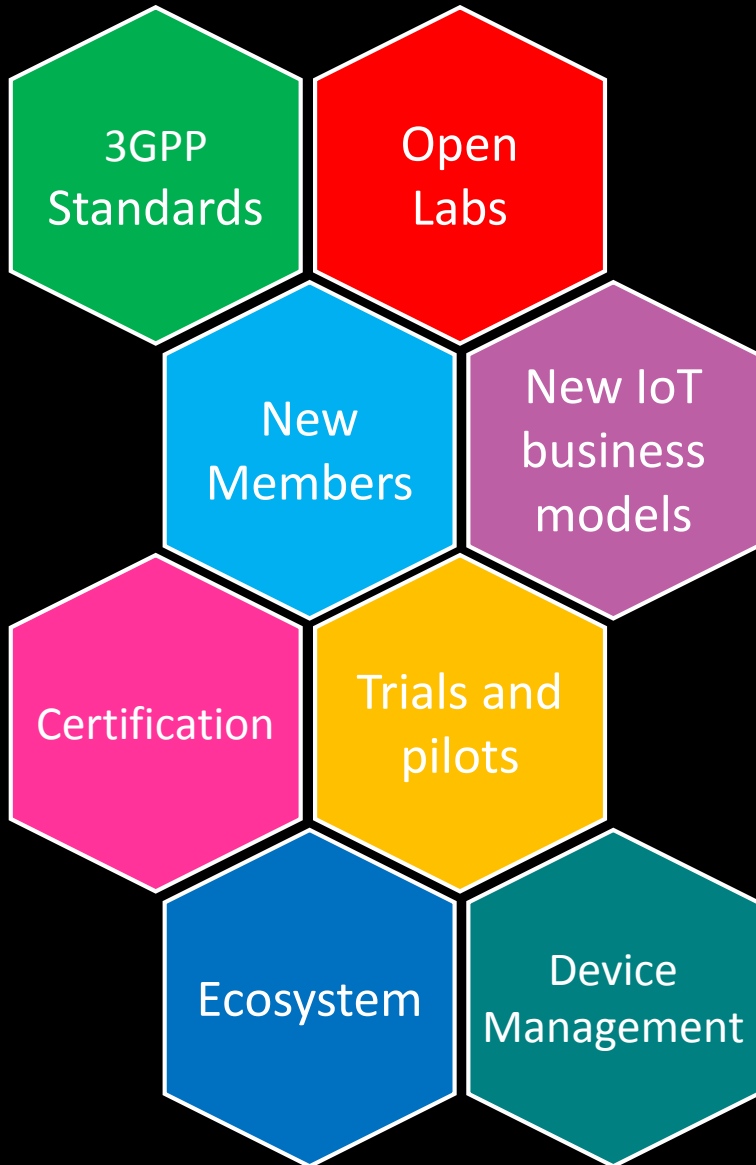
# NB-IoT Forum Update

November 2016



Mobile IoT = Trusted IoT

# NB-IoT Forum – key updates

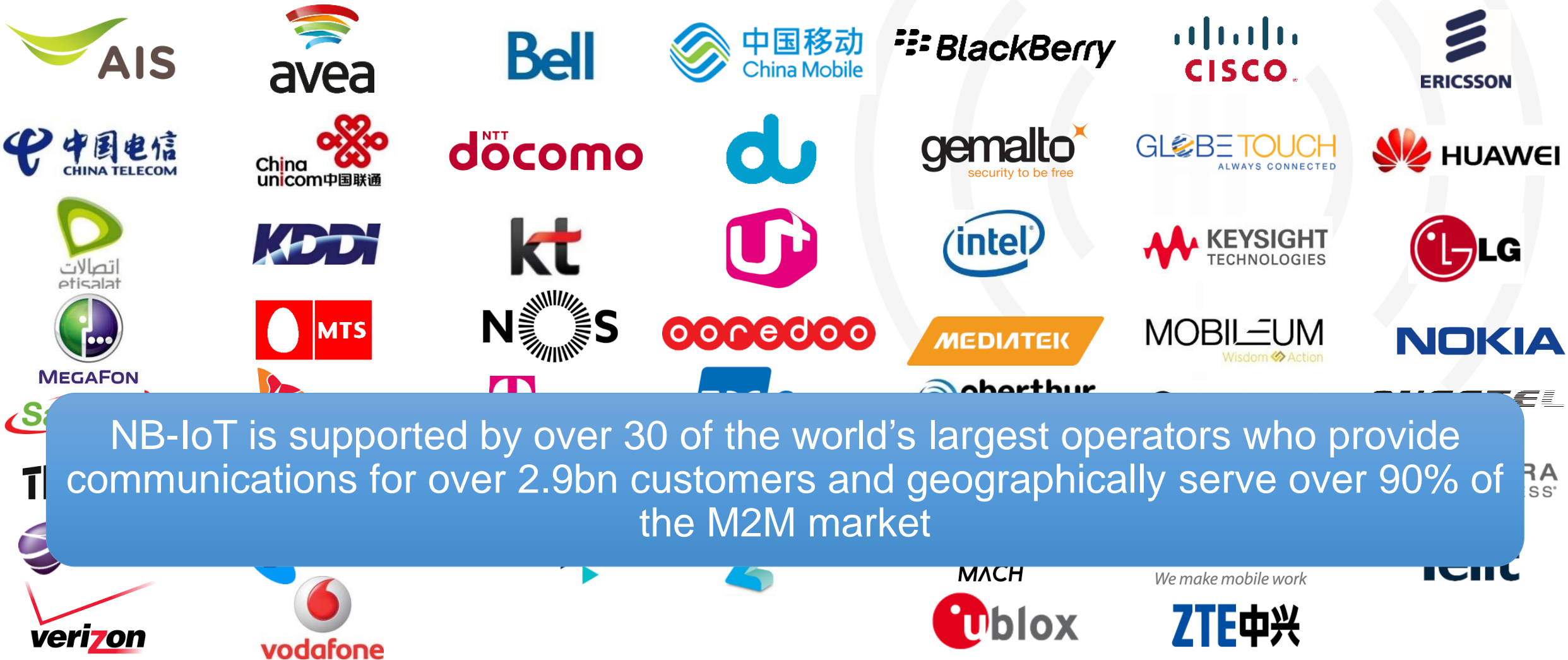


- NB-IoT is gaining traction across multiple industry segments
- 22 trials/customer pilots announced or under plan
- Work to embed NB-IoT technology in real devices has started in earnest
- Software based network upgrade path has been confirmed by key LTE network vendors
- Preparations for commercial launch in 2017
- Multiple NB-IoT Open Labs are open and planned

# Narrow Band IoT Forum Membership Snapshot

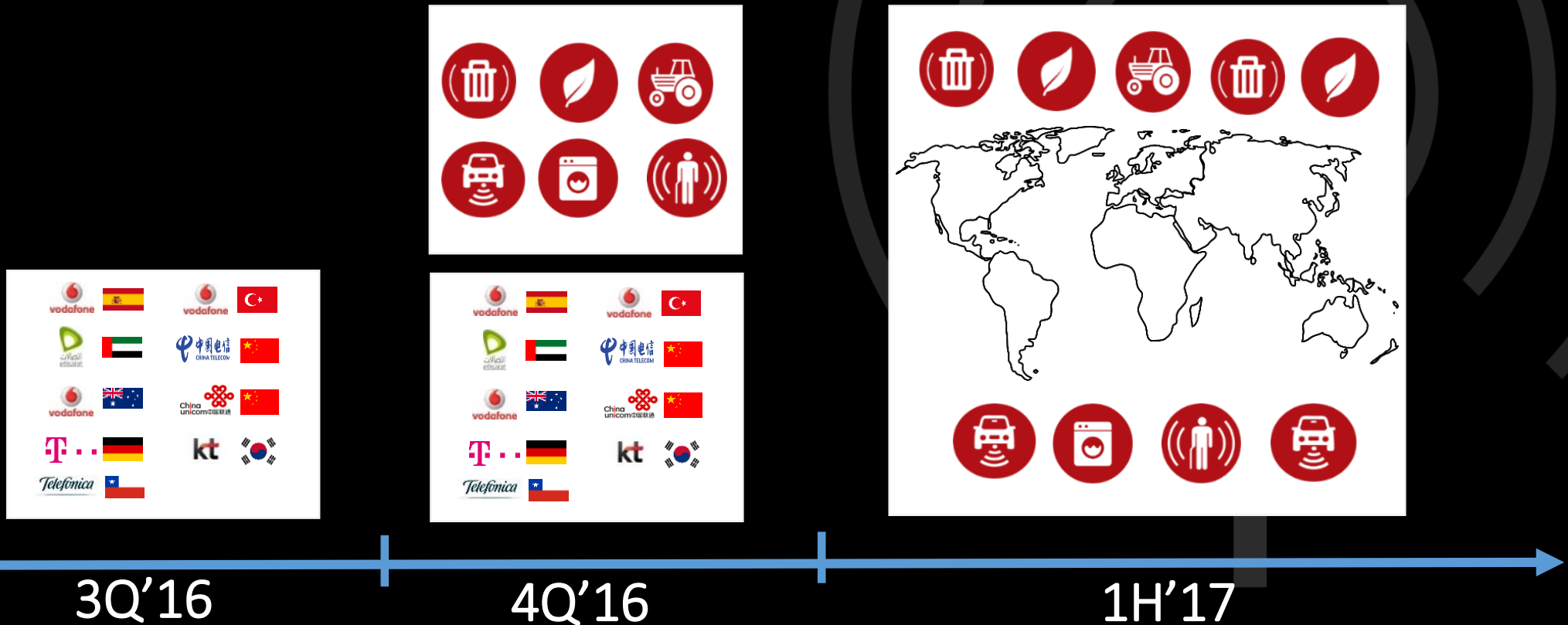


Mobile IoT



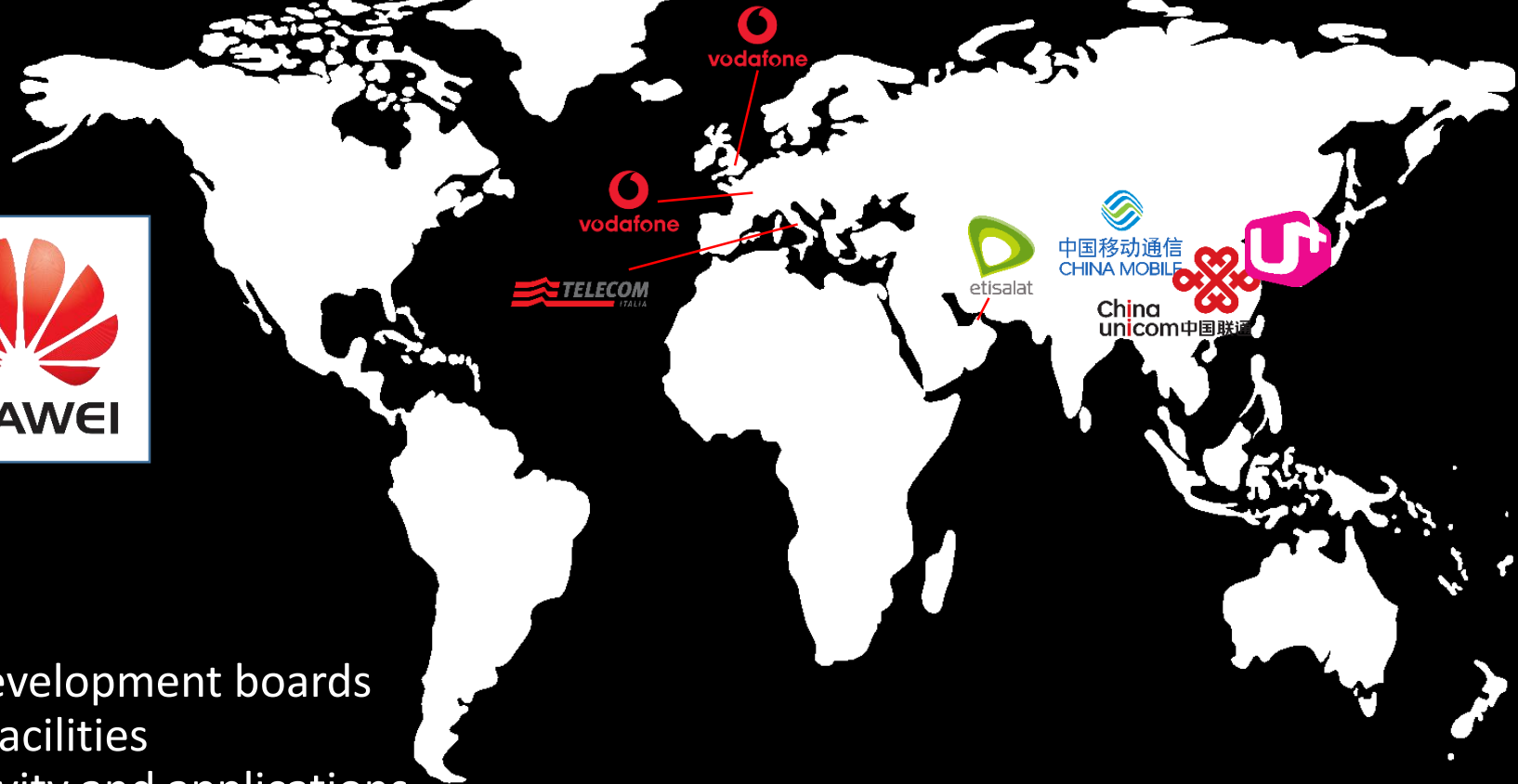
# More NB-IoT pilots are on the way

NB-IoT Pilots based on 3GPP standard have now commenced. At least 22 pilots will take place globally by mid-2017



# ..... supported by an increasing number of NB-IoT Open Labs

- Vodafone (UK & Germany)
- Etisalat
- Telecom Italia (Italy)
- China Mobile
- China Unicom
- LG Uplus



## Open Labs will:

- Provide evaluation kits and development boards
- Offer integration and testing facilities
- Demonstrate NB-IoT connectivity and applications
- Encourage innovation towards new NB-IoT services and applications

# NB-IoT Launches!!

- Vodafone (Q1 2017)
  - Spain
  - Ireland
  - Netherlands
  - Germany
- Deutsche Telekom (Q1 2017)
  - Netherlands
- China Mobile (H1 2017)
- M1 Singapore (H1 2017)





# NB-IoT Forum is promoting innovative development



Mobile IoT

Mobile IoT Showcase launched on Monday 14<sup>th</sup> November

- 6 vendors / operators supplying development kit and Open Lab access
- 30 companies registered to take part
- 3 entries will be shortlisted by judging panels to showcase their MIoT product development at MWC 2017

An excellent opportunity to demonstrate the progress that NB-IoT / LTE M / EC-GSM-IoT is making in the industry





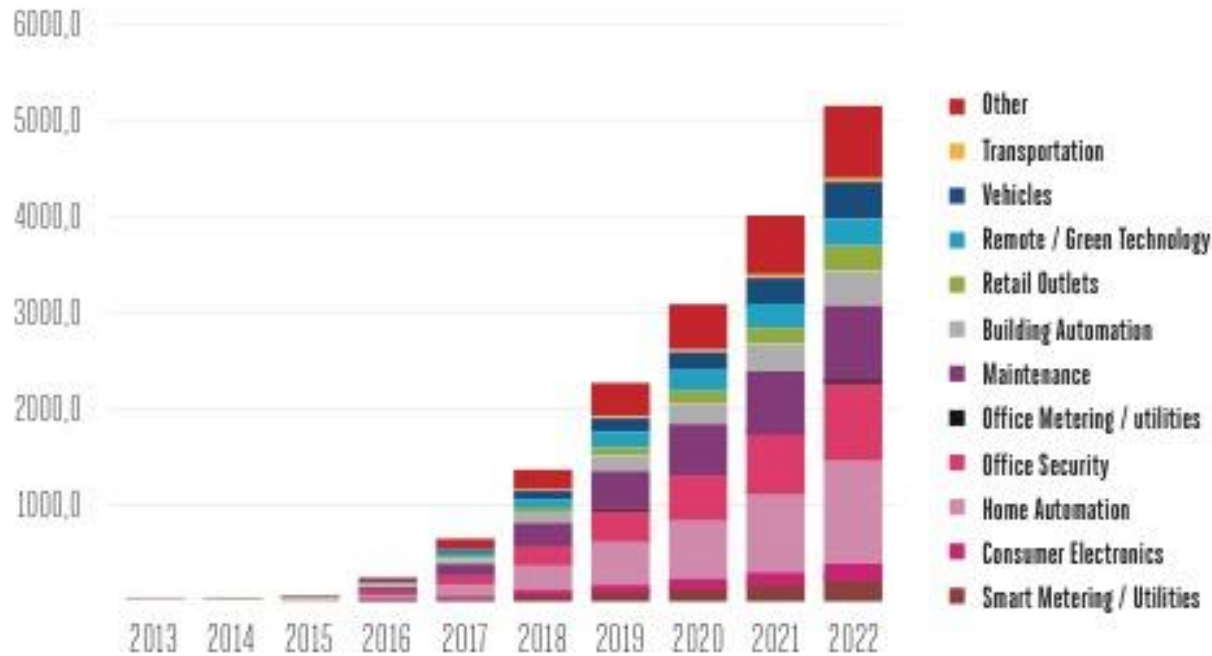
# Vodafone Progress





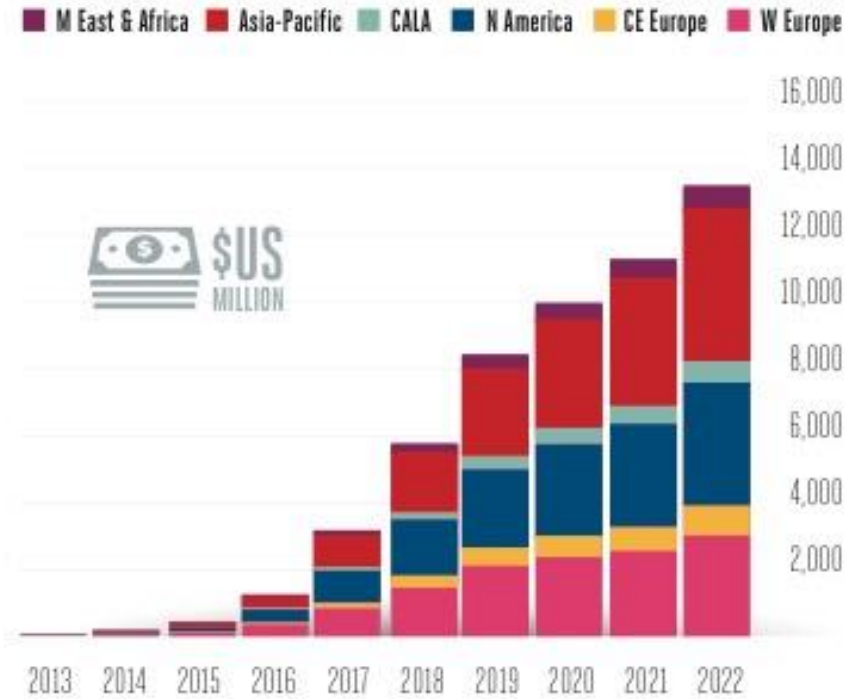
# Market potential for LPWA

Global LPWA Connections Share, by Application (millions)



Source: Strategy Analytics

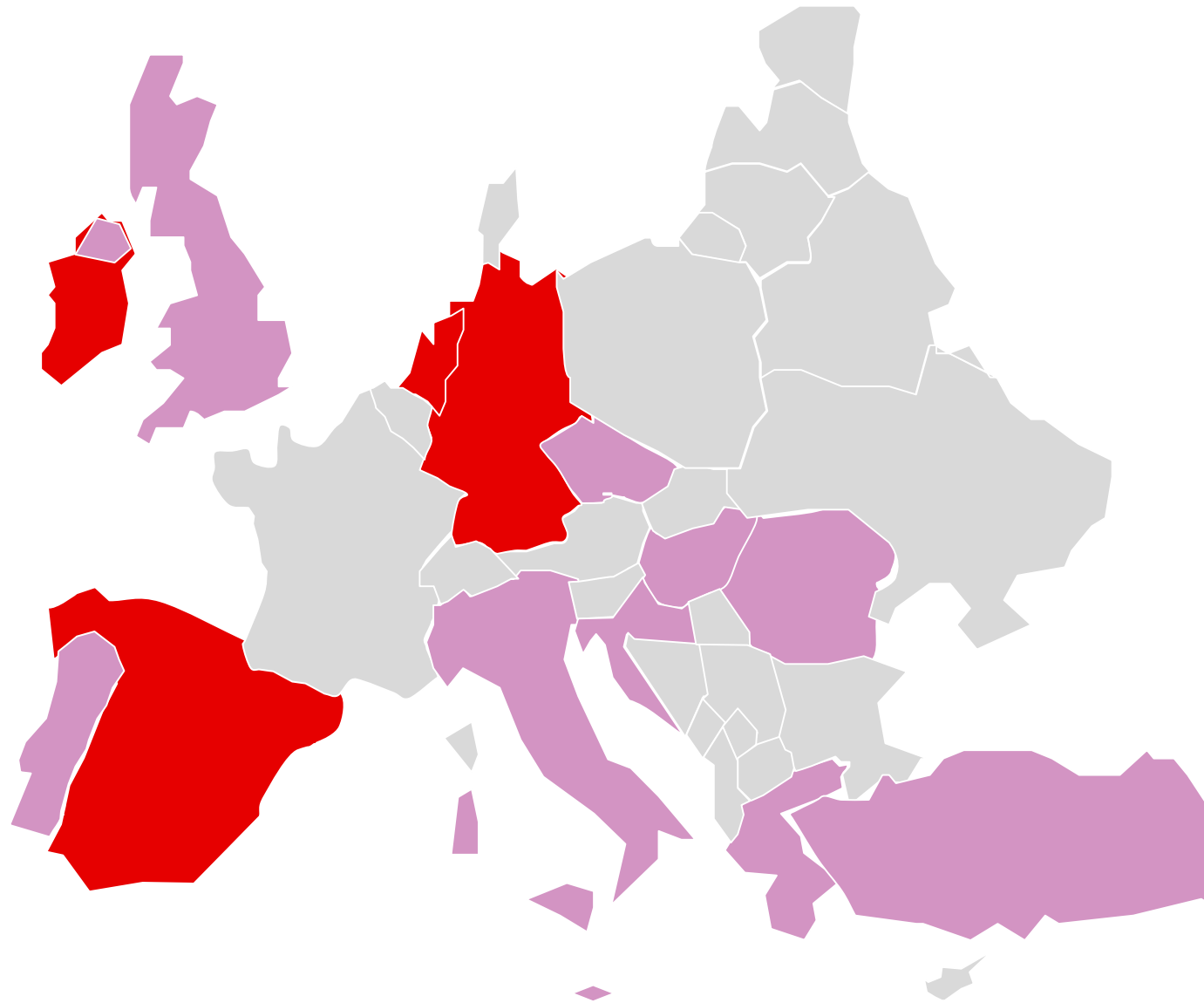
Global LPWA Annual Revenue, 2013-2022 (US\$ million)



Source: Strategy Analytics, February 2016



# Vodafone NB-IoT Rollout in Europe



- Commercial NB-IoT services to begin in Q1 2017 (Germany, Ireland, Netherlands, Spain)
- Rapid future national 'switch-on' to follow, enabled by advanced connectivity & flexible core architectures







# Chipset and module support for NB-IoT



# NB-IoT will deliver the LPWA component of 5G



- ✓ Massive connection density
- ✓ Power efficient
- ✓ Best coverage
- ✓ Consistent with 5G approach of building on LTE evolution

- +20dB coverage
- >10y battery life
- Flexible RAN deployment
- Core optimisations

- Positioning
- Broadcast support
- Improved data rate
- Lower power class
- Mobility enhancement

5G  
LPWA

R13

R14

R15

NB-IoT is the foundation of 5G LPWA, continuing to evolve in 3GPP Release 14 and beyond



## Key Messages

- Vodafone will offer commercial NB-IoT services in 4 European markets in Q1 2017, with further roll-outs to follow rapidly
- NB-IoT will be launched by multiple operators during 2017 supporting a diverse range of LPWA use cases
- Volume availability of NB-IoT chipsets and modules will be critical to scaling the commercial deployment during 2017

**..... underpinned by ecosystem development supported by the NB-IoT Forum**





# Thank You

Mobile IoT = Trusted IoT



TODAY - M2M 2015

TOMORROW - MOBILE IoT 2016+

