

LP-WAN BOF

LP-WANs: what and why?

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Wireless technology

cost
energy
licenses

Data

Smart City
Industry 4.0
Smart Transportation
Smart Agriculture

Bouygues Lora: \$5M

1 battery = 20 years

Private networks

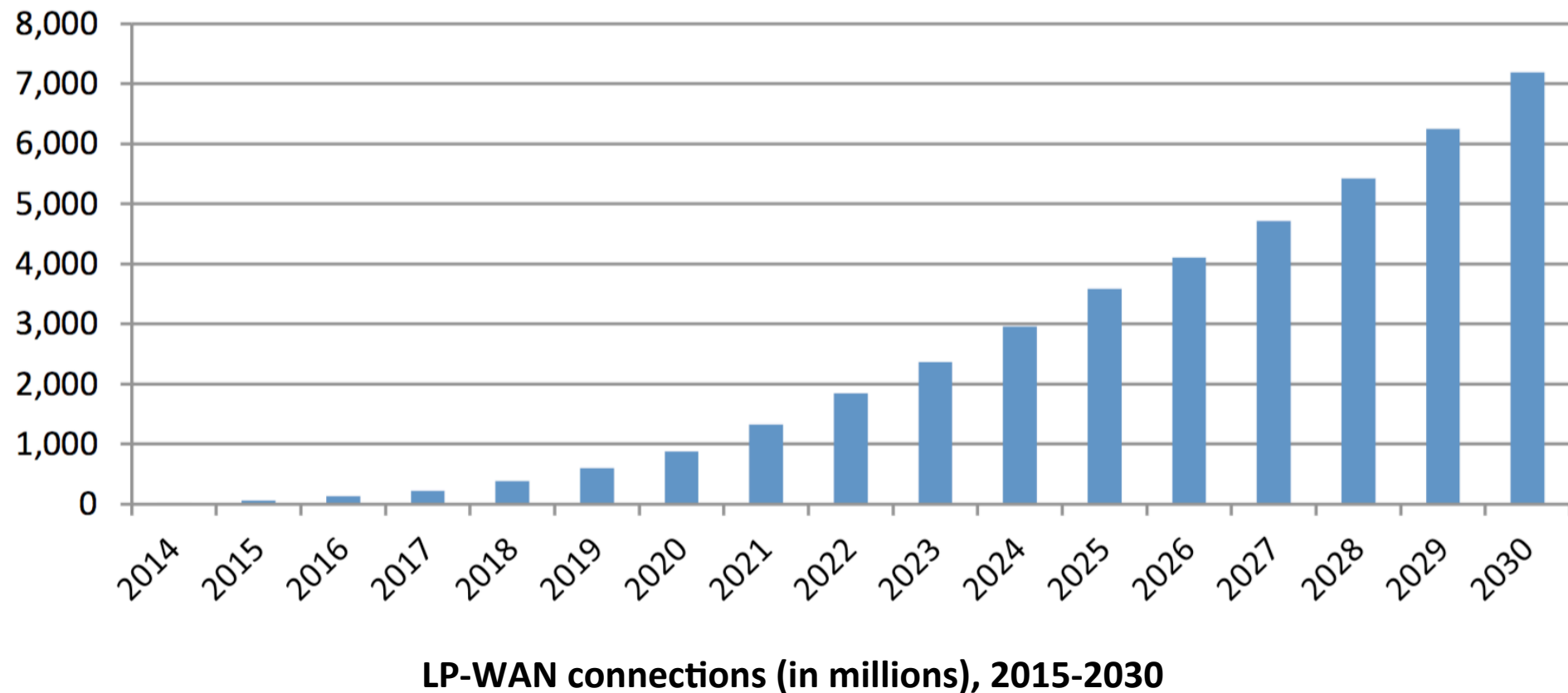
Low-Power Wide-Area Networks

NB-IoT
5G

Applications



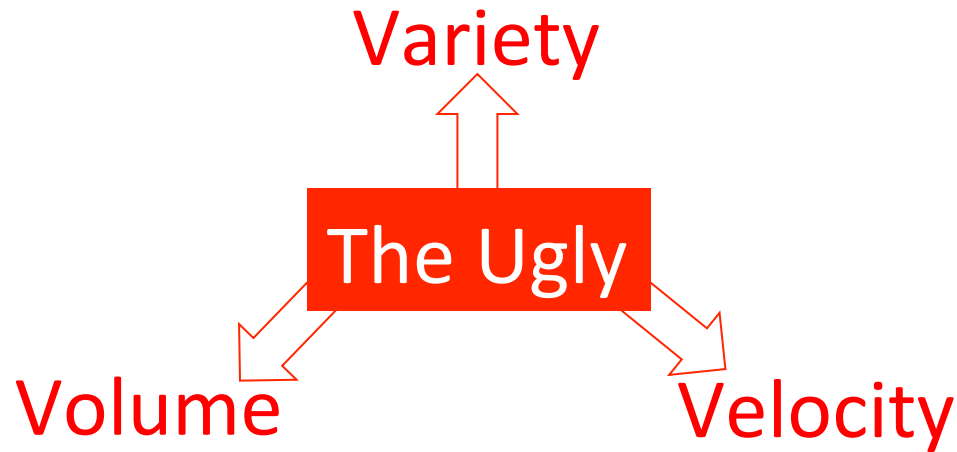
Why now?



A revolution in the making

- The Good
 - Low-Power (link, device, antenna)
 - Low-Cost
 - 8000 antennas to cover France
 - ISM – license-free
 - Private networks
- The Bad
 - Low-Rate (50 bps – 200 kbps)
 - Very-high density (100k devices / antenna)
 - ISM
 - Interference
 - Duty cycle (1% or 10%), including antennas
- The Ugly
 - Several competing technologies, proprietary, non-networking oriented approaches
 - Vertical (silo) architectures
 - No IP / Interconnection /
 - Appendage to current networks

The triangle of death



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In 2020

\$589 billion

Total revenues from LP-WAN services

Machina Research, Dec 2015

Goal: help the ecosystem thrive

- Most technologies
 - Specific Identifiers/Security/Authentication
 - Lots of interoperability issues
- Bring IP benefits and IETF protocols to LP-WANs
- Work together with technology providers
 - Leverage existing technologies