OrbiWise

Domenico Arpaia - CEO

LPWA Networks in Practice
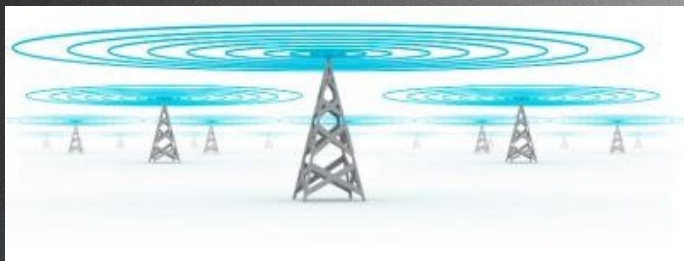
Powering the Internet of Things Revolution

OrbiWise Overview

- ▶ Headquartered in Geneva, Switzerland.

- ▶ Extensive experience in wireless, especially cellular.

- ▶ Complete Network Software Solution based on LoRaWANTM standard.

- ▶ Large Deployments in Asia, EU and Americas.

LoRa™ Alliance

Contributor Member

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LoRaWANTM Network Features

Long Range
- ❑ Greater than cellular
- ❑ Deep indoor coverage
- ❑ Star topology

Max Lifetime
- ❑ Low-power
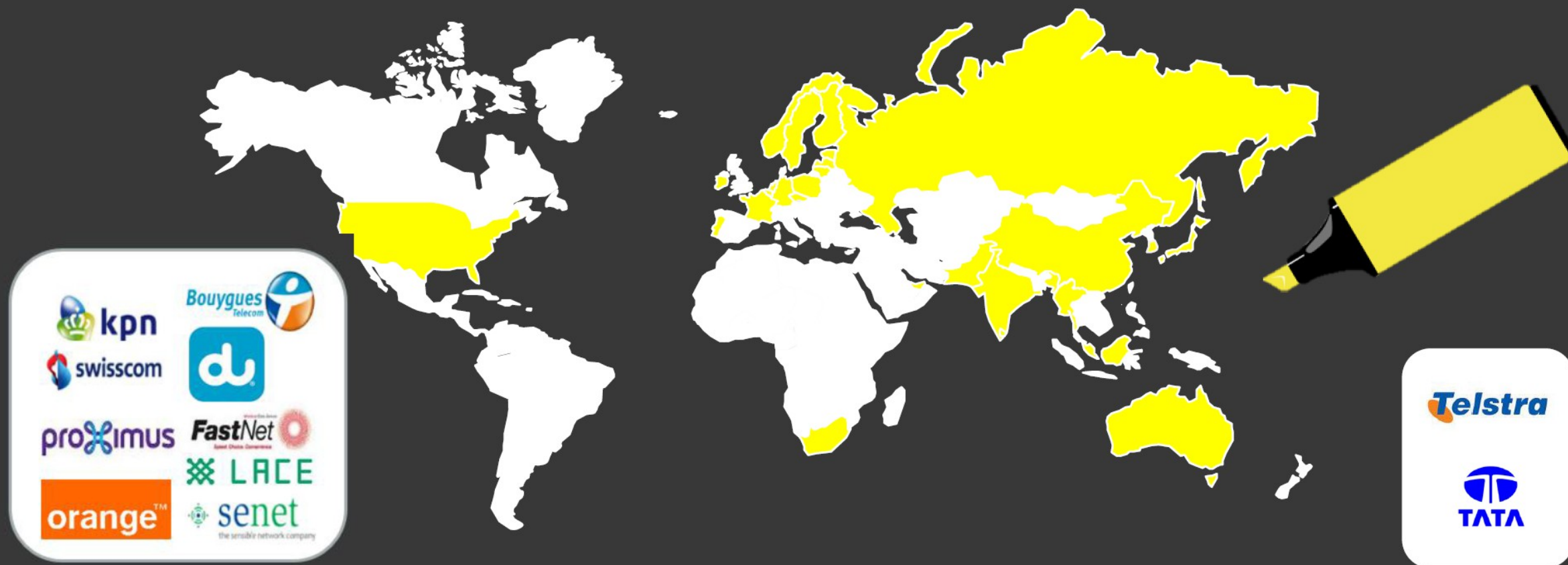- ❑ >10yr on AA cell
- ❑ >10x vs cellular M2M

Advanced Radio
- ❑ Adaptive Radio
- ❑ Multiple Device Classes
- ❑ Spread Spectrum

Low Cost
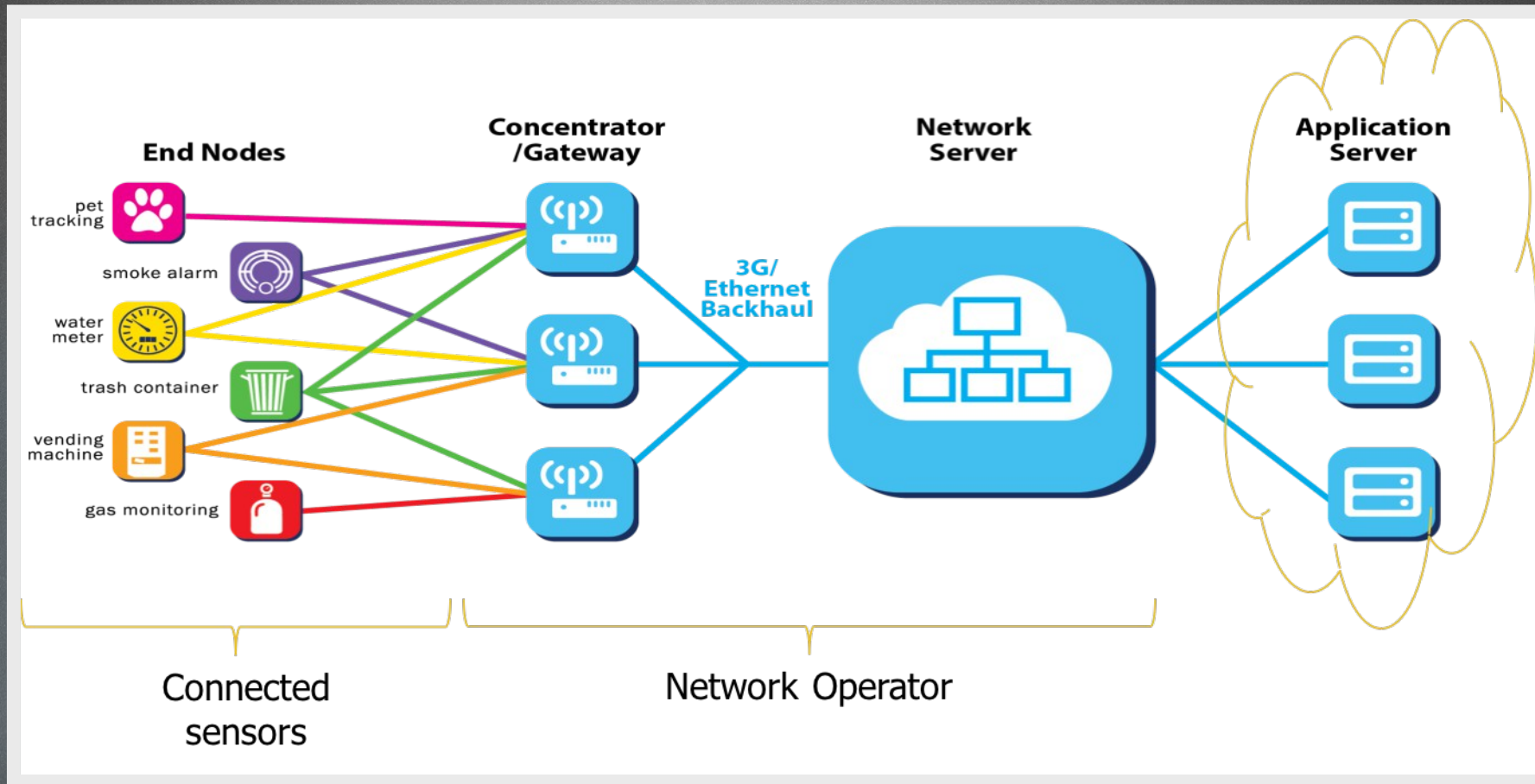- ❑ Minimal infrastructure
- ❑ Low-cost end-node

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Turning the World YELLOW, where next?
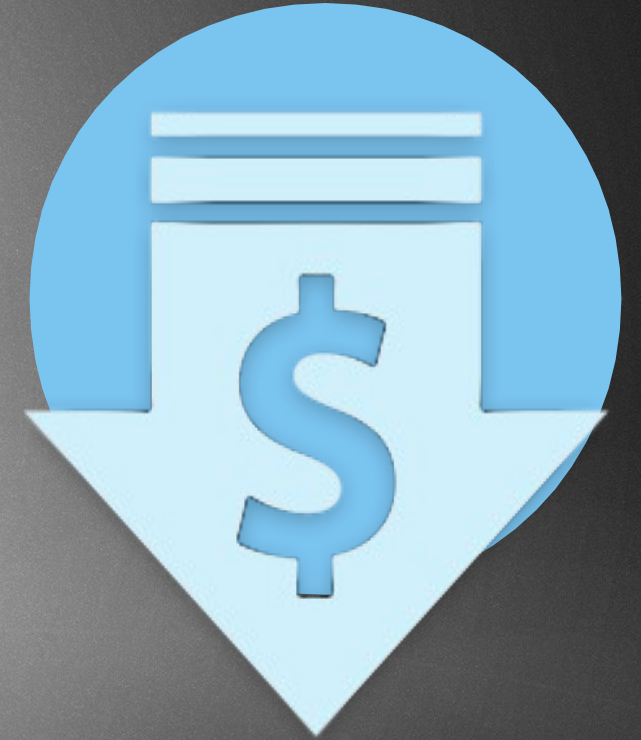
17 Announced national deployments, 53 in decision

>325 Members
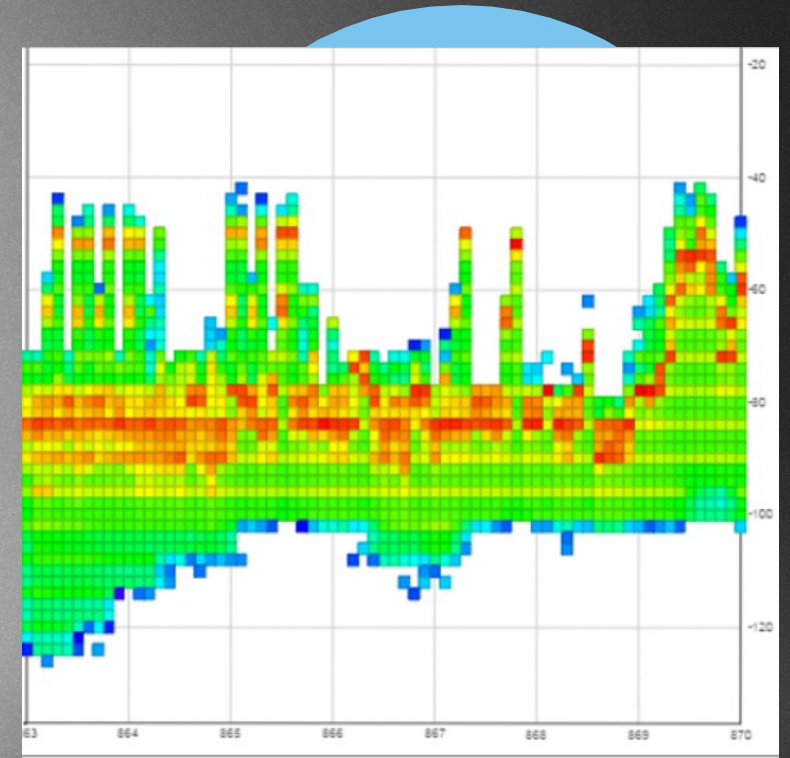
LoRa Alliance.org

Simplified Value Chain / Ecosystem

Cost Structure Advantage

▶ Industry objective is to deploy billions of devices.

▶ Each part of the value chain needs to be cost-optimized to reach this goal.

▶ Challenging for traditional wireless technologies.

▶ The LoRa ecosystem is there already.

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Robustness to Interference

▶ Interference in license-free bands could be a challenge…

▶ In practice, features in the system allow operation also in high-interference scenarios.

▶ Spatial diversity, dynamic link adaptation, spectrum scanning and dynamic frequency allocation, Listen Before Talk are among those techniques.
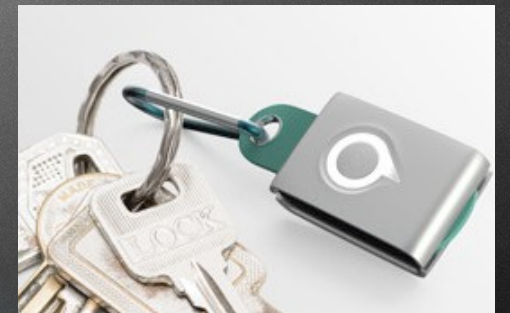
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Alternative Deployment Approach

- In some markets, site acquisition and installation costs dominate initial CapEx investment.

- Alternative approaches can be pursued in those markets.

- Small indoor gateways, set-top boxes, consumer's objects, utility poles…. Many alternatives can be pursued case-by-case
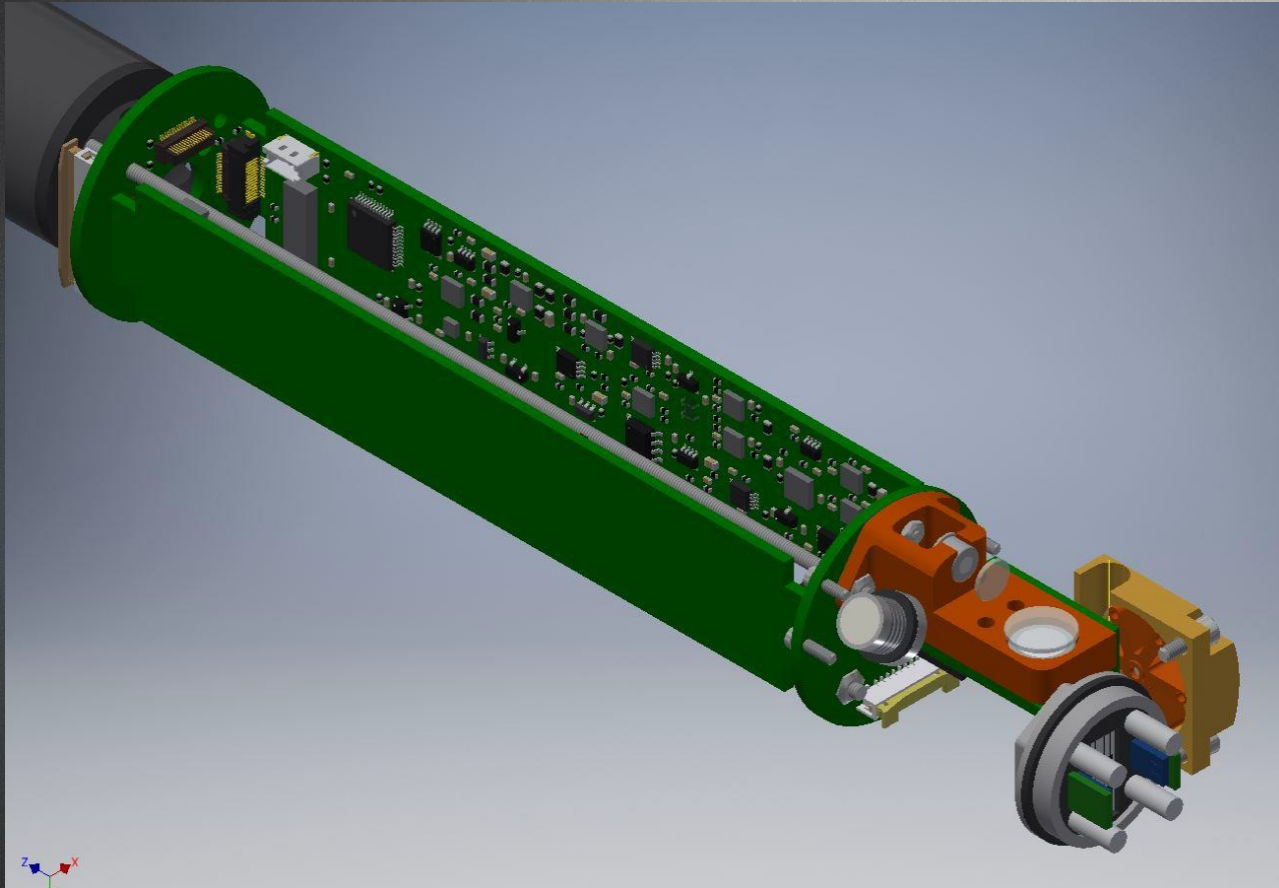
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Devices

- With all new communication systems, there is usually a catch-22 challenge between availability of widespread network service and availability of devices…

- LoRa Alliance ecosystem effect helps a lot here…

- Many commercial devices/solutions already available

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Water Quality Probe

Fragmentation of Radio Requirements

▶ In ITU Region 1, use of 863-870MHz band is rather uniform across different countries

▶ In Asia and Latin America, there are often differences between countries in terms of available spectrum and related radio regulations.

▶ Can have impact on time-to-market and economies of scale.

▶ Support from regulations' agencies important for widespread deployment of these technologies.

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Thank You

Powering the Internet of Things Revolution

Products Highlights

- Advanced network management tools

- Central Configuration of macro- and nano-gateways

- Radio configuration, firmware update, reboot, etc.

- Alert Management: cell load, gateway breakdown, etc.

- Extensive Network Statistics:

  - Cell activity, block error rate, cell interference level,

    rate adaptation performance, network fabric latency,

    etc.

- Dynamic spectrum scanning

- Full Trace and Advanced Issues- Detection Scripting