LPWA announcements increased significantly in 2016 and NB-IoT is at the forefront

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The number of LPWA deployments is continuing to increase, with 85 new commercial networks announced in 2016. Network technologies are fragmented – at least eight different LPWA technologies are in use worldwide. The NB-IoT standard accounts for more announcements than any of the competing options. This article discusses recent developments in LPWA network initiatives, quantifies the popularity of different LPWA protocols in different regions worldwide,[1] and considers the effect of the recent standardisation of NB-IoT on operators' LPWA strategies.

The rate of LPWA network deployments and commitments almost tripled in 2016 compared to 2015

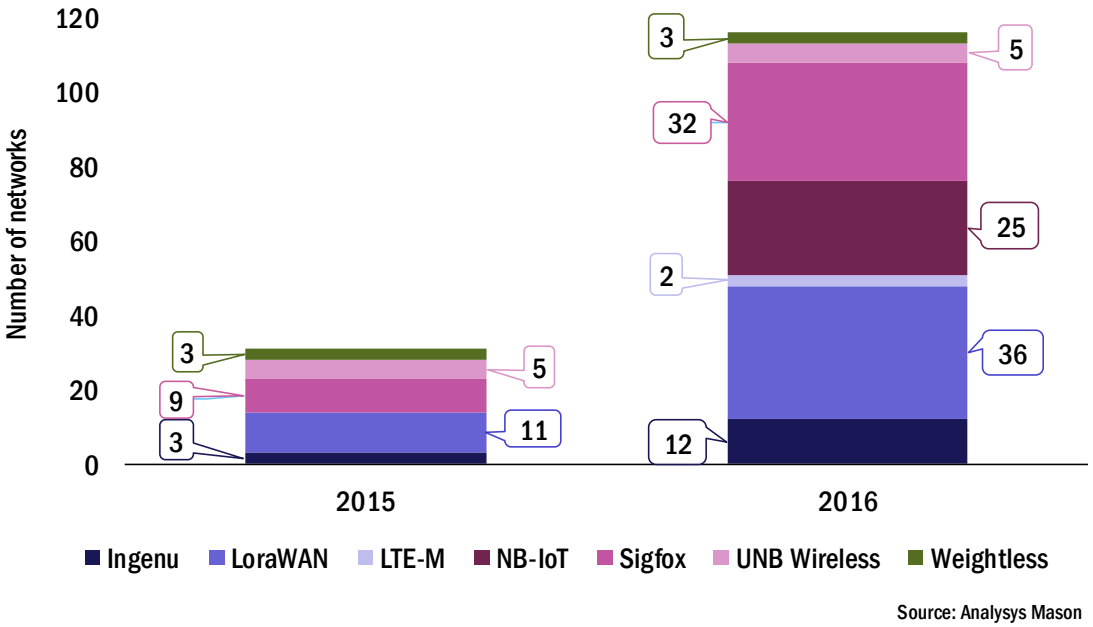
Interest in LPWA continues to grow – 85 commercial networks were announced in 2016, compared to 29 in 2015.[2]

- NB-IoT claimed 25 new announcements in 2016. This trend is driven by Vodafone, which aims to roll out LPWA networks in all its footprint by 2020, starting with Ireland and the Netherlands in 1Q 2017.
- LoRa announced 25 network initiatives in 2016, up by 127% compared to 2015. An increasing number of start-ups and infrastructure providers are launching LoRa initiatives; only 28% of all LoRa initiatives were operator-led in 2016, down from 82% in 2015.
- Sigfox announced 23 new initiatives, compared to 9 in 2015. However, operator interest in Sigfox continues to be limited; only 3 of the new initiatives were operator led.

1 For more information, see Analysys Mason's *LPWA networks index 4Q 2016*. Available at www.analysysmason.com/lpwa-index.

2 Technologies included are: RPMA (by Ingenu), LoRaWAN, LTE-M, NB-IoT, Sigfox, UNB Wireless and Weightless.

Figure 1: Active (deployed) or planned LPWA networks, 2015 and 2016



Source: Analysys Mason

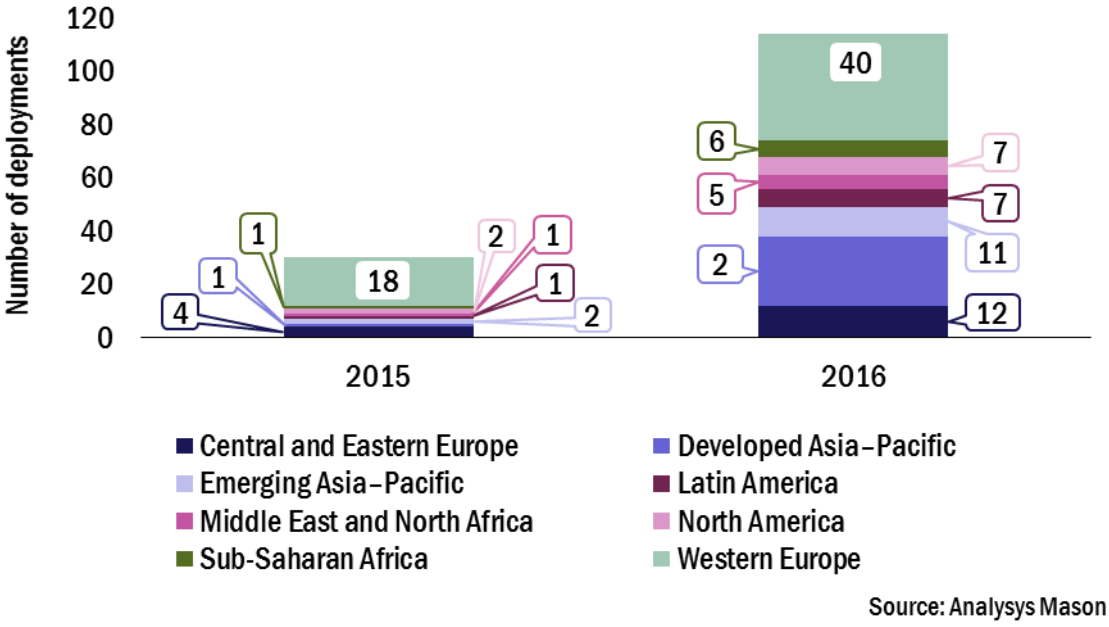
LPWA networks are spreading out from Europe and the USA to the rest of the world

Most LPWA deployments in 2015 were concentrated in Western Europe and the USA, where many of the companies that provide LPWA technology solutions are located. Two-thirds of new initiatives were in Western Europe or the USA in 2015, but these two regions represented less than a third of the new initiatives in 2016. Existing and planned networks in Western Europe and USA covered 10% of the world's population in 2016 and 45% of global GDP (in nominal terms).

Activity in the developed Asia–Pacific region is the main driver of this regional shift, representing 30% of all new network initiatives in 2016, up from 4% in 2015. Operator-led initiatives are particularly strong in Japan, Singapore and South Korea. Most of these network initiatives use NB-IoT technology – for example, M1 in Singapore and KT in South Korea have opted for it – but SoftBank (Japan) has opted for LoRa. Start-ups using LoRa and Sigfox technology are also active in the region, particularly in Australia and New Zealand where start-ups launched nine different LPWA initiatives.

While some LPWA technologies are having success across different geographies, we are not seeing any region-specific adoption trends. For example, LoRa networks exist in large developed markets (for example, Japan) and small less-developed markets (for example, Estonia). Likewise, Sigfox network deployments do not have any obvious trends. The inroads that some technology providers have made in specific regions appear to be mainly due to proximity and knowledge of the local market, such as Ingenu in the USA or Sigfox in Europe, rather than other factors such as price or capabilities. The spread of LPWA networks only indicates that countries with strong industrial bases and populations with high levels of disposable income, and hence more potential IoT applications, are the early adopters and prime candidates for LPWA network roll-outs.

Figure 2: Active (deployed) or planned LPWA networks, by region, 2015 and 2016



Operators' LPWA technology preferences are diverse but NB-IoT is gaining traction

Telecoms operators are increasingly investing in LPWA, with 38 new operator-led initiatives in 2016, up from 12 in 2015. The standardisation of NB-IoT specifications appears to have encouraged more operators to adopt the technology in favour of alternative standards – the 25 NB-IoT operator-led initiatives accounted for 66% of all new operator initiatives in 2016. LoRa accounted for 18% of all new operator-led initiatives in 2016, down from 75% in 2015, while the number of operator-led initiatives using Sigfox also declined from 25% in 2015 to 8% in 2016.

Vodafone's network announcements account for many of these initiatives, but even when discounting these, a pattern of operators increasingly opting for NB-IoT emerges: 8 new operator-led NB-IoT initiatives took place in 2016.

The number of LPWA deployments increased significantly in 2016, and we can expect more announcements to be made before Mobile World Congress (MWC) 2017. It is likely that the launch of the first real commercial deployment of an NB-IoT network will be among the announcements at MWC 2017.