Mobile and Wide-Area IoT: LPWA and LTE connectivity

Technical and Economic Analysis: Matching each application with the best standards

Abstract

Low-power wide-area (LPWA) technologies promise to open new market opportunities by providing power-optimized IoT connectivity instead of data-optimized connectivity that's the hallmark of existing mobile wireless protocols or short-range technologies. Consequently, LPWA received much attention in recent months from the investor community, and with it important questions have been raised on which wireless technology and ecosystem is best positioned to win in this market.

This report takes a comprehensive approach of investigating the spectrum regulatory framework, the wireless protocols, the ecosystems and business models and the IoT applications to develop a complete strategic assessment of the market. We developed techno-economic models for LPWA and LTE-based technologies to couple performance metrics such as coverage and capacity with the Total Cost of Ownership for SigFox, LoRa, Weightless, RPMA, and other LPWA technologies in addition to emerging LTE-based technologies such as Cat-m1 and NB-IoT. Additionally, we show how these technologies and incumbent short-range wireless solutions such as ZigBee, ISA100.11a and WirelessHART match up with more than 80 different IoT applications.

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