What does the global LPWAN IoT landscape look like in mid-2023?

The most common Low Power Wide Area Networks (LPWAN) IoT technologies adopted globally today are cellular NB-IoT and LTE-M, also known as CAT-M, and unlicensed LoRaWAN and SigFox. Unlike WiFi, BLE, ZigBee, and Z-wave, the LPWAN IoT technologies and solutions support large areas (1-2 km in dense urban areas, 5+ km in rural areas, and 10+ km in remote locations), and most devices will last for many years on AA, C or D type batteries. The most significant number of LPWAN devices and sensors deployed globally are cellular NB-IoT, LoRaWAN, and in the last spot SigFox.

It is no surprise that cellular LPWAN IoT technologies have the most significant number of IoT devices deployed today, considering that Information Technology and Telecommunications are the number 5 and 10 most significant global industries by revenue generating $5.1T and $1.8T per year, respectively. Nevertheless, the cellular LPWAN IoT technologies are a tiny fraction of the overall cellular business, accounting only for $6.6B per year, or 0.37% compared to the global Telecommunications industry revenue alone. Considering the above, it is surprising how little adoption the cellular LPWAN IoT business had made since 2017 when it was introduced and steadily marketed for the next five years as the next growth engine for cellular operators.

Over the years, most global cellular operators learned that IoT differs significantly from their current connectivity, data, and IT services business. Many now consider new business and go-to-market strategies to advance their IoT deployments. The current B2B IoT customers, predominantly comprised of utility, enterprises, smart cities, and real estate management companies, are looking for practical, easy-to-deploy, and low-cost to maintain end-to-end IoT solutions to solve their problems — not the connectivity with optimized data plans. The cellular operators, however, continue to offer what they know best and can compete at — connectivity with IoT-optimized data plans. In short, until now, the cellular operators could not effectively address the current B2B IoT customer's needs. Furthermore, the cellular IoT business units could not make a meaningful impact on their business's top or bottom lines mainly because they could not scale the IoT business as it requires a very different go-to-market strategy compared to their traditional business that they have perfected over the last 25 years.

Starting in 2022, some cellular operators looked to spin off their IoT business units from their main connectivity business and create separate business units focusing on developing IoT solutions to address utility, enterprises, smart cities, and real estate management companies' real problems. In other words, they now consider creating a similar business model and go-to-market strategy as the unlicensed LoRaWAN IoT technology (and Sigfox lately) utilized from the beginning. The newly created cellular IOT business units will buy connectivity from the cellular operators, which they know well and excel at.

Cellular operators should be able to grow their IoT business if executed well, with a focus on providing end-to-end IoT solutions for B2B customer problems. However, it's unclear if the connectivity revenue alone will significantly add to the top line. The new IoT business units, if created, must pay close attention to the IoT solutions' development costs, timelines, and practical recurring revenue that the enterprises and end consumers can afford, which vary from $0.25 to a max of $2 per month for most use cases when deployed at volume. Although most B2B use cases can be addressed with unlicensed LPWAN technologies such as LoRaWAN and SigFox, certain IoT use cases are only feasible and practical with cellular IoT, such as global asset tracking, automotive, critical asset monitoring, streetlight, video surveillance, and others that require global or countrywide coverage, low network delays, proper mobility, and larger data-rates as is the case for LTE-M or CAT-M.

CONCLUSION

In conclusion, some cellular operators have realized their current business models are unsuitable to address B2B customers' needs as the latter require complete IoT solutions to address their problems, not just IoT connectivity with optimized data plans. They are actively looking at creating stand-alone IoT business units that will focus on developing, marketing, and channeling the B2B end-to-end IoT solutions, similar to what the unlicensed LoRaWAN and to some degree, SigFox LPWAN IoT providers and operators have been doing for years.

In Part 2, we will discuss the current status of unlicensed LoRaWAN and SigFox LPWAN IoT technologies.