The number of IoT connections grew steadily in 2021, but IoT revenue continued to come under pressure

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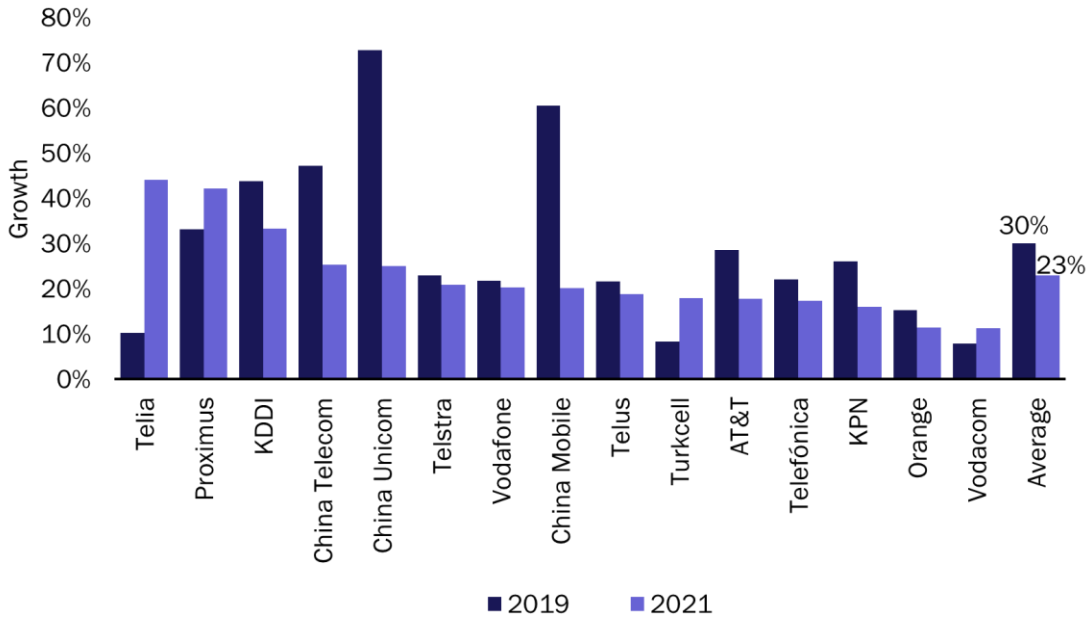
Analysys Mason's *IoT/M2M revenue and connections tracker* shows that IoT operators had mixed results in 2021. The growth rate for the number of IoT connections was below pre-pandemic levels, but was above 15% for most operators in the latest version of the tracker (prior to the pandemic, most operators reported growth of above 20%). IoT revenue growth fared less well: KPN, Telstra and Tele2 all reported single-figure revenue growth rates. However, Chinese operators performed well and had an average year-on-year revenue growth rate of 35%.

This weak revenue growth can be partly attributed to knock-on effects from the pandemic. For example, the worldwide chipset shortage has disrupted the high-value automotive market. The sustained high levels of competition in the IoT connectivity market have also played a role.

The number of IoT connections continued to grow in 2021, albeit at a slower rate than before the pandemic

Growth in the number of IoT connections was more stable in 2021 than in 2020. Just two operators (Orange and Vodacom) reported growth rates of less than 15% in 2021 (compared to five in 2020 for the same set of operators). However, as Figure 1 shows, only four operators (Proximus, Telia, Turkcell and Vodacom) reported a growth rate in 2021 that was higher than their growth rate in 2019 (Turkcell and Vodacom had unusually low growth in 2019).

Figure 1: Year-on-year growth in the number of IoT connections, selected operators, worldwide, 2019 and 2021



Source: Analysys Mason, 2022

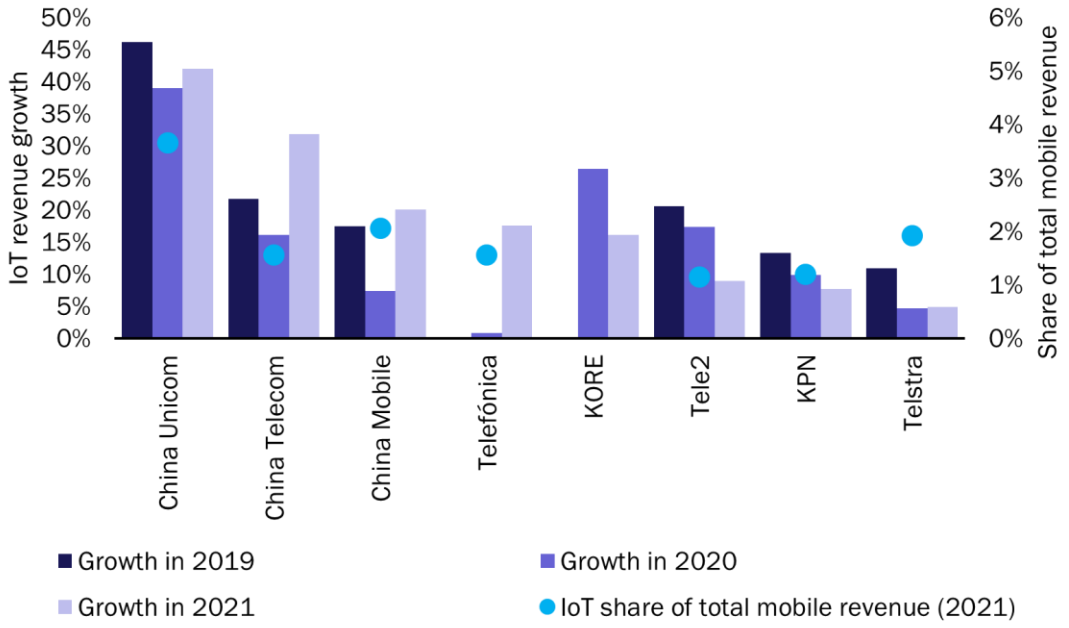
Figure 1 also shows that the simple average of the growth in the number of connections in 2021 was 7 percentage points lower than that in 2019. Some operators explained that this was caused by negative impacts from the pandemic that continued into 2021. These include supply chain disruptions and the loss of customers who experienced financial distress as a result of the pandemic. Operators for whom the automotive sector constitutes a large part of their IoT business continued to be adversely affected by the ongoing chipset shortages. Indeed, the number of new vehicles produced worldwide barely increased between 2020 and 2021, and even fell by almost 5% in Europe.[1]

Chinese operators' IoT revenue grew strongly between 2020 and 2021, but revenue growth slowed down for most other operators

Figure 2 shows the annual IoT revenue growth rates for operators that reported it. Telefónica was the only non-Chinese operator to report a higher growth rate in 2021 and 2020 than in 2019, but this was partly due to its below-par revenue performance in 2020.

1 ACEA (2022), *World motor vehicle production*. Available at: https://www.acea.auto/figure/world-motor-vehicle-production.

Figure 2: Year-on year IoT revenue growth, 2019–2021, and IoT revenue as a share of the total mobile revenue, 2021, selected operators, worldwide[2]



Source: Analysys Mason, 2022

The data in Figure 2 highlight the following key points.

- **Chinese operators.** The Chinese operators performed strongly in 2021; all three achieved revenue growth of at least 20%. China Mobile's IoT revenue reached almost USD1.8 billion in 2021, and China Unicom's approached USD1 billion; this is impressive given that its IoT revenue was just USD324 million as recently as 2018. China Unicom cited the introduction of 5G connectivity and strong growth in the use of its connectivity and device management platforms as contributing factors to its revenue growth success. IoT is also steadily becoming a larger part of China Unicom's wider business; IoT accounted for almost 4% of its total mobile revenue in 2021 (compared to 1–2% for most other operators).

- **KORE.** KORE reported total revenue growth of 16% in 2021. However, its IoT connectivity revenue grew by just 6%, compared to 45% for IoT solutions. KORE's ambition since 2018 has been to move being from a connectivity player to being a solutions provider, and it appears to be having success in this regard. IoT solutions accounted for 32% of its total revenue at the end of 2021, up from just 11% in 2019.

- **Telstra.** Telstra's IoT revenue grew by just 4.9% in 2021. This is a marginal increase on the growth in 2020 (4.7%). Both figures are surprising because its number of IoT connections grew by more than 20% in both years. This limited revenue growth may be partly due to the growth in Telstra's number of LPWA connections because such connections have a low average revenue per connection (ARPC). Telstra already has over 1 million connections on its NB-IoT/LTE-M networks and has contracts in place with Yarra

2 The IoT share of the total mobile revenue is not shown for KORE because the operator is an IoT MVNO that derives 100% of its revenue from IoT. Telefónica reports 'IoT' and 'Big data' together as one revenue segment and does not report the split of mobile and fixed revenue for all opcos. We assume that mobile revenue accounts for 60% of its total telecoms revenue based on the mobile/fixed split of those opcos that do report data (Brazil, Germany and the UK).

Valley Water (pipeline management; 1 million connections) and Intelihub (smart meters; 4.1 million connections).

The IoT connectivity market environment is unlikely to improve significantly in the short term, but there are some positives for operators

The economic environment is unlikely to improve significantly in 2022. Chipset shortages have continued into 2022, but may ease by the end of the year. The level of competition in the IoT connectivity market will remain high, thereby putting pressure on IoT connectivity revenue. However, there are some positives to come for operators.

- Operators and vendors (such as Nordic Semiconductor and Qualcomm) have reported growing traction in the LPWA market, particularly for smart metering. Indeed, a few significant metering contracts have been awarded and several tenders are ongoing. Operators with NB-IoT and LTE-M networks will be well-placed to win these contracts, some of which will connect more than 1 million devices.

- 5G opportunities on the public network may start to become apparent, which could provide a boost to IoT revenue.

- Ongoing labour shortages will cause companies to focus more on digital transformation, of which IoT will play a part. An Analysys Mason survey conducted for Sierra Wireless in April 2022 found that 72% of enterprises use IoT to automate their processes and reduce costs.[3] In addition, some of the post-COVID-19 stimulus funding will be allocated to IoT projects, which will boost the investment in IoT.

3 Sierra Wireless (2022), Enterprise Requirements for IoT Connectivity: An Analysys Mason Survey. Available at: https://www.sierrawireless.com/resources/report/enterprise-iot-connectivity-requirements.