

# FutureNet World 2023: CSPs' new operating models will be data-driven and will make extensive use of AI

June 2023

Joseph Attwood and Bence Szeidl

FutureNet World 2023 was held in London, UK in May 2023. The event focused on the future of telecoms networks and specifically on how communications service providers (CSPs) have been introducing data and artificial intelligence (AI) into their organisations to drive network automation. This article summarises why CSPs must improve their operating models and how they will do this by making use of AI and resolving skill shortages.

## CSPs need to adapt their operating models to deal with the increasingly complex environments in which they operate

CSPs are in the process of transforming their networks and adopting cloud-native architecture. In a [recent survey](#), [Analysys Mason](#) found that 71% of CSPs will have adopted cloud-native network functions by late 2023, up from 26% in December 2022. This transition adds operational complexity because network functions are disaggregated from hardware, and monolithic network applications are split into microservices, which are distributed across the network. Effective automation is needed to cope with this increasing complexity.

CSPs struggle to deliver data-driven operations because they must deal with extremely large data volumes. Thomas Hodi, Senior RAN Expert & AI Product Owner at A1 Telekom Austria Group, shared that each of the group's 50 000 mobile base stations generates 3000 KPIs per hour; a volume of data that humans cannot manage. Abhilekh Bhardwaj, Head of Operations Strategy at Three UK suggested that CSPs have four concerns about the data that is used to drive automation:

- the quality of the data
- the ability to access the data while dealing with privacy and security issues
- having the domain expertise to understand what the data is telling you
- being able to respond to broken data pipelines.

Managing these data challenges will be critical to automating the network and to resolving its growing complexity.

## AI is transforming network operations but CSPs must go further in their use of this technology

CSPs at FutureNet World 2023 recognised that AI was an essential tool for analysing large volumes of data. Furthermore, AI will play a key part in attempts to automate networks because it can automatically generate insights from that data.

One of the buzzwords of the event was AIOps (or artificial intelligence for operations). Mabel Pour-Fenollar, Global Head of Digital and Zero Touch Operations at Vodafone, explained that Vodafone has adopted AIOps

for anomaly detection, root-cause analysis and predictive analytics to help to identify and resolve network health issues. Vodafone also uses the anomaly detection capabilities of AIOps to detect security issues. However, CSP representatives shared that AIOps adoption is still in its early stages and, at present, it is predominately used for anomaly detection. Progressive AIOps use cases such as the troubleshooting and remediation of network issues, and execution of automated workflows to optimise network planning and avert churn will require more effort from CSPs. For example, CSPs will need to find ways to digitise troubleshooting and remedial workflows to automate remediation.

VMware's Network Scorecard rApp solution, which computes predictive benchmarks for RAN performance, won FutureNet's award for innovative use of AI. By contrasting AI-derived benchmarks with actual network performance, CSPs can identify how they can improve network performance.

Using AI to reduce network energy consumption was also a significant theme at the event. For example, event exhibitor Nokia promoted its Nokia AVA Energy Efficiency software, which analyses network traffic to detect and partially power down sites that are carrying low volumes of traffic. Nokia claims that this solution can reduce power consumption by up to 30%, between 2 and 5 times more than non-AI systems, which partially shut down networks based on fixed schedules.

## CSPs were also interested in generative AI but had concerns about its practicality

Panellists at FutureNet World 2023 were interested in the potential of generative AI, suggesting use cases such as supporting customer contact centres, content generation and generating automations by helping to translate engineers' intents.

However, CSP representatives raised concerns about if and how generative AI could be embedded in their new operating models. Prashant Kumar, Chief Innovation Officer for Elisa Polystar, voiced concerns about attempts to train a generative AI model to write code to resolve network issues. Such model must be fed large numbers of internally generated scripts that codify the work of detecting and fixing network issues. However, CSPs currently lack the documentation needed to train these models. Prashant highlighted that before attempting to train their own generative AI models, CSPs must first resolve challenges surrounding collecting and storing data at scale.

## CSPs were keen to address the shortage of staff with data science and software engineering skills

CSPs' representatives agreed that they must attract young and talented graduates to solve shortages of staff with technical skills and to become more innovative. This can be done through graduate schemes or forming partnerships with universities. However, these representatives admitted that new graduates can see the telecoms industry as unexciting and that CSPs may find it difficult to retain employees that have in-demand skills.

CSPs' representatives also mentioned attempts to attract software engineers from other industries (for example, the finance, healthcare, defence and technology industries). CSPs would do well to [explore the benefits of attracting employees from the tech firms following recent redundancies](#). In addition, CSPs are training existing employees, especially to improve data science and AI/ML skills. For example, Orange's Engage 2025 plan includes a EUR1.5 billion investment in a skills-building programme.

We believe that CSPs should develop long-term strategies to develop skills internally and attract talent from universities and other enterprises to resolve skills shortages. In addition, in the wake of announced job cuts at CSPs such as BT and Vodafone, CSPs must affirm that the skilled workers they are looking to attract will not be affected by these cuts.