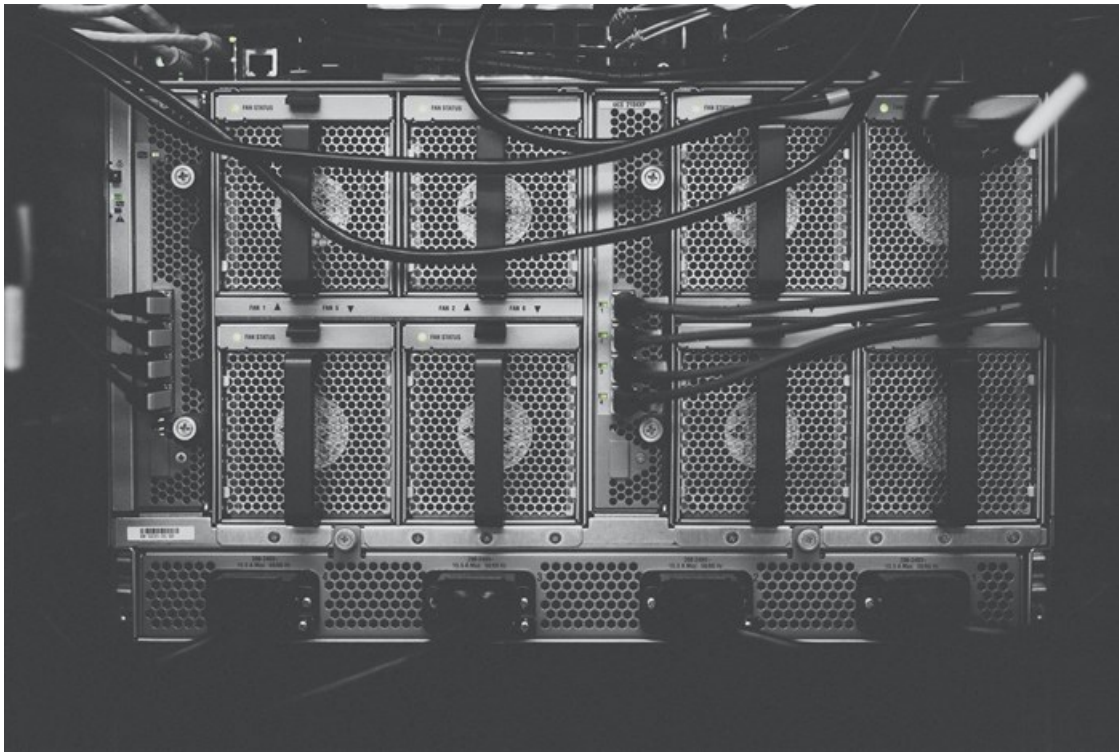


How data centres at the network edge can support the next sustainable evolution of telcos

By [Jonathan Duncan](#)

9 Jan 2023

According to analysts, it is estimated that the number of active IoT devices globally will surpass 25.4 billion in 2030. It is an astronomical figure and paired with the digital transformation of the global economy, data generation will grow exponentially.



Source: [Unsplash](#)

Africa is also included in this growth curve and according to [Mordor Intelligence](#), the South Africa IoT market is expected to register a compound annual growth rate (CAGR) of 19.12% from 2022-2027. According to the research house, the ongoing digital transformation across the country, supported by IoT technology, is empowering the next-generation business model. The challenge is that this data generated will need to be processed quicker and thus closer to the point of generation.

This has relevance for the telco industry with telco edge computing emerging as the next frontier in data centre computing environments. It delivers a lower cost and value creation, particularly as telcos roll out commercial 5G networks. This capability is further scalable by leveraging technologies like cloud, network function virtualisation (NFV), and software-defined network (SDN), running on 5G.

Moreover, this edge adoption will likely see telco and cloud architectures converging into a single architecture which is why the telco industry needs to act now and start preparing for the implementing of edge computing.

The convergence

Although the convergence of telco and cloud architectures is expected to increase, if you drill a bit deeper in essence it means merging Internet-attached data centres and distributed cloud-enabled multi-access edge computing (MEC) edge data centres.

Essentially, telcos and the IT industry have historically operated in parallel, yet their separate paths are now converging at the network edge, which is the interface point of computer networks, IoT and the internet.

Building a sustainable telco edge

When establishing the MEC/edge networks, it is critical that sustainability stays at the forefront of all development considerations. These data centres need to be built in a cost-effective, resilient, and sustainable manner.

Deploying MEC/edge data centres at scale poses considerable challenges such as:

- Power and cooling requirements
- Remote management
- Environmental impact
- Cyber security due to its dispersed locations and exposed environments

It could be easy to overlook the environmental impact of these distributed network edge data centres due to their small size. However, when aggregated is substantial as the average annual power usage effectiveness (PUE) of today's distributed network edge data centres which is more often than not, poor and typically around 2.0, due to the low power density (i.e., ~1kW/rack or less than 1kW/m²) of legacy equipment.

By contrast, the annual PUEs of centralised core cloud data centres can be as low as 1.1. Furthermore, it is predicted that the network edge with 5G will consume three times more energy on average than 4G. There are number of feasible solutions that can mitigate telco edge computing's impact on the environments. One best practice is implementing software tools to help measure and visualise energy use, GHG (greenhouse gas) emissions, and waste recycling. These are essential for visibility, target setting, and reporting.

In conclusion, building out distributed edge and MEC/edge data centres at scale is emerging as a need within the telco sector globally, and that remains true in Africa, where with their aggregate energy consumption and resource requirement these need to be accomplished in a cost-effective, resilient, and sustainable way.

Reliability and sustainability should therefore be a core area of focus with tools, technology and best practices deployed to prevent downtime, improving the overall reliability and reducing energy usage.

ABOUT THE AUTHOR

Jonathan Duncan is vice-president Anglophone Africa: Secure Power Solutions at Schneider Electric.

For more, visit: <https://www.bizcommunity.com>