



# **SCALED TELCO WORKLOAD MIGRATION TO PUBLIC CLOUD: A MID- OR END- 2020S AFFAIR?**

Webinar Q&A

05/09/2024

## Questions and Answers:

This document outlines the questions and answers received during the STL Partners webinar, **Scaled telco workload migration to public cloud: A mid- or end-2020s affair?** on 05/09/2024.

### How is the regulation playing a role in the adoption of public cloud platform for network workloads, namely NIS2/EUCS?

This was asked early in the webinar but is in fact answered in Section 2.4 of the presentation.

### I noticed that most of the cited cases were in Europe and North America. Do you see any traction particularly for the left side (Core) in Southeast Asia?

Outside Europe and the US, we mentioned the production deployments of AWS and NTT Docomo in Japan for open RAN (NEC), Airtel's 5G NSA with Google Cloud (using GC's own core), and e& on Microsoft Azure's Operator Nexus. **LG U+** uses AWS's cloud as a back-up for its 5G SA core.

### What types of Network workloads (e.g Packet Core, Signalling, Policy etc) are advised to deploy with HCPs?

The potential scope of public cloud migration encompasses most of those functions: packet core, both control plane and user plane, routing, firewall, some GI-LAN functions and real time service assurance functions. In terms of what each individual telco should move to the HCP, this will depend more on what the existing vendor for that particular function can support: do they have a solution which can be moved to the public cloud (is the function virtualised, is it cloud-native, can it run on AWS's cloud, on GDC, on Azure Operator Nexus). We're not aware of any IMS, SBC or voice signalling deployments on public cloud, although these functions are generally virtualised, but not so often cloud-native. This is probably because of the complexity of the protocols involved, along with the diverse origins of the real-time services handled by the IMS and SBC, for example. These are better processed in real time and within the network, rather than creating an additional loop to the hyperscalers and back again.

### What is your insight on as-a-service trend ? Migrating workloads to public cloud does not mean by default aaS model. Today mostly are as a product even on public cloud

We are not familiar with the contractual terms for the specific deployments we have listed, but I think you are right that they are not all strictly usage- or volume-based. For very high volumes of workloads, this would not be economical. Nonetheless, this is still a bone of contention for many operators, and is one of the barriers to migration of network workloads to public cloud, as we indicated in the presentation.

## Related to network AI and analytics, where are you categorizing it? is it on OSS or Telco IT?

The analysis of telco data from the various sub-systems, including BSS and OSS, to extract insights and trends would fall under our category of telco IT/data/AI.

## Related to vendor capability, do you have any overview on the OSS, BSS or AI?

We have spoken with certain vendors of either OSS and BSS, whose systems can be deployed on any of the three hyperscalers' platform: Blue Planet, Digital Route, Optiva, Netcracker.

## How do you see Microsoft's recent decision to layoff Azure for Telco employees in relation to MS Telco strategy?

I have described it in the slides on Azure. It's difficult to see how Azure's very deep telco expertise isn't going to be eroded by that change of focus. Certainly, for migration of network workloads. At the same time, theirs is not a hard exit from the telco vertical since, unless we hear otherwise, the deployments at AT&T and e& will continue to be supported. In doing so, Microsoft will continue to hone its telco expertise.

## Do you see cloud consumption model pricing as a barrier to public cloud adoption? It seems many enterprises are realising cost saving if they do their private cloud instead of a bw consumption model pricing for public clouds.

We haven't got access to the commercial agreements between specific telcos and their hyperscalers; but if an operator like O2 Telefonica in Germany decides to move its core workload to the AWS cloud, then it must be that the terms the parties struck make financial sense on both sides. Smaller players might have less negotiating power than a Telefonica.

At the same time, the cost of establishing and maintaining their own private telco cloud is hardly negligible for the telcos. True, they won't incur a cost in proportion to the bandwidth they use (at least not linearly correlated as it could be when consuming public cloud). But there are nonetheless servers to maintain, energy to pay, staff that need to be trained and paid to maintain and operate this infrastructure. So, the costs might be less visible than a regular payment for cloud services, but they are nonetheless significant.

The issue of private vs. public cloud is that since many telcos have invested in their private telco cloud, they now need to depreciate those assets.

## What do you think the Chinese network providers approach is in this migration to the cloud?

As far as we are aware, none of the Chinese operators have migrated any significant network functions to the public cloud, as such. Equally, none of them have deployed open RAN or vRAN but continue with a dedicated appliance-based approach to RAN. They have all rolled out 5G SA cores, though, and these are cloud-native, of course. We don't have any specific information to this effect, but my hunch would be that a lot of the centralised SA core functions are operated by Huawei or ZTE effectively on an outsourced basis, possibly in data centres facilities they own or have dedicated capacity in. Huawei, of course, is a major hyperscaler in its own right in China. Effectively, there is not much difference between this mode and saying that you are running your network from the public cloud.

## Hyperscaler comparison. the solution that they launched are over their public or private (on-prem)?

A mix. Azure's deployment with AT&T and e& are all on-prem. AWS's deployment with O2 Telefonica is a mix of their own datacentre (control plane) and on-prem (user plane). AWS's with Dish is AWS's locations except for those workloads that are in fact not on AWS's cloud at all but on VMware's private telco cloud infrastructure (and in Dish's own locations) for the vCU.

## RAN is an infrastructure located out in the field--ONLY RAN SOFTWARE and OPERATING SYSTEMS can be put in the CLOUD. RAN as a structure will never be in the CLOUD

As I said in the webinar, and as Emma has indicated in her answer to the previous question, it's true that DISH, for example, is running the DU functions in its own facilities over VMware; while the CU functions are running on AWS on Amazon Elastic Kubernetes Service (EKS). However, this hybrid mode – in the case of a Nokia, for example – can extend to dedicated or RAN-optimised hardware running the DU functions on the hyperscale edge (Nokia's 'anyRAN' proposition). And that includes, for example, Graviton 3 and later processors in AWS that use the same optimisations and acceleration as are used by the Marvell processors in Nokia's dedicated BBUs or AirScale servers.

I think, therefore, that to say critical RAN workloads can never be run in the cloud is predicated on an understanding of the cloud as basically involving purely COTS hardware, and not incorporating hardware, silicon and acceleration specifically designed for the RAN. But if an AWS or Azure can incorporate such hardware into its cloud – as they are in fact doing – then there's no reason why those workloads can't run on their clouds any less they can run on a telco's private cloud or dedicated baseband appliances.

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