THE ROAD TO CLOUD-NATIVE DISAGGREGATION: DO'S AND DON'TS FROM LESSONS LEARNED

Webinar: Questions and answers

July 2022

The road to cloud-native disaggregation: Do's and don'ts from lessons learned

*This document outlines the questions and answers received from the STL Partners webinar, **The road to cloud-native disaggregation: Do's and don'ts from lessons learned**, which was hosted on Wednesday 20th July 2022.*

In this document, we seek to address the questions raised in the webinar that we were unable to address in the time available.

You can also watch the recording of the session, and also access the slides, using the link here. *We have included the following timestamps for the webinar recording:*

- **01:48** for the introduction to our presenters and panellists

    - **Phil Laidler**, Managing Director, Consulting, STL Partners

    - **Yesmean Luk**, Principal Consultant, STL Partners

    - **David Gordon**, Consultant, STL Partners

    - **Run Almog**, Head of Product Strategy, DriveNets

- **02:40** for STL's presentation on "The road to cloud-native disaggregation"

- **33:30** for DriveNets' presentation on "Network Cloud as a Catalyst for Innovation"

If you have any questions not addressed in the webinar or this Q&A document, or want to hear more about our research findings or from our speakers, please contact:
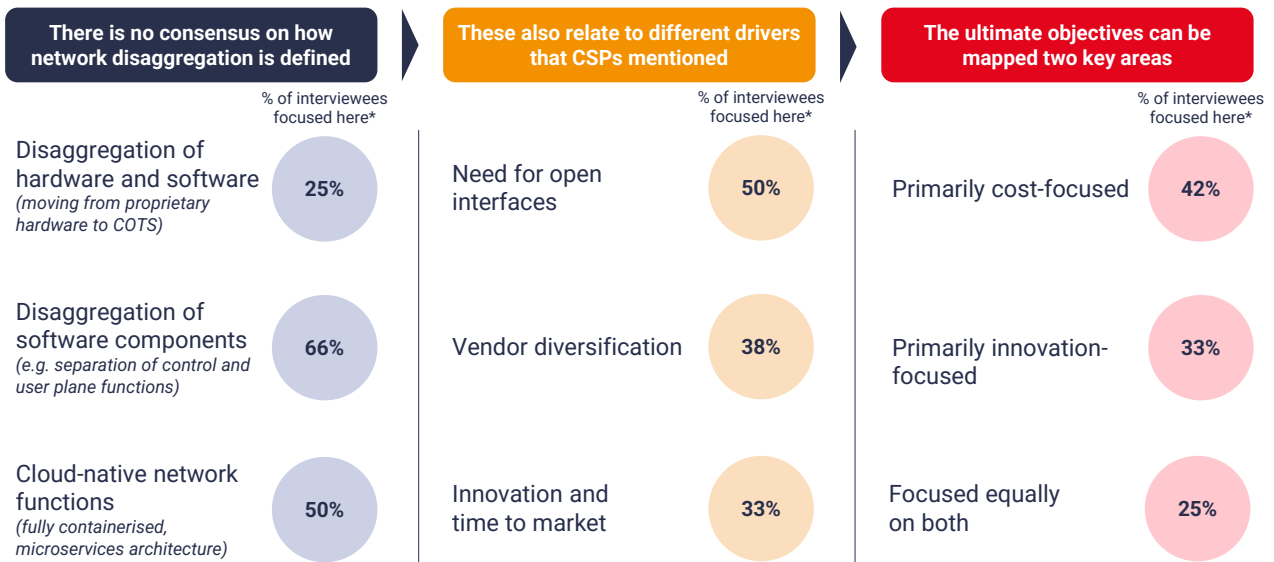
- Yesmean Luk, STL Partners – *yesmean.luk@stlpartners.com*

- Dudy Cohen, DriveNets – *dcohen@drivenets.com*

Webinar questions and answers

The below questions were received from the webinar audience during the live session, this does not include the questions asked to our panellists.

1. **What did operators consider is "cloud-native disaggregation" when responding? It seems like many think only of the RAN and not full end-to-end**

STL Partners: In our research programme, we found that there was little consensus on how operators define 'cloud-native disaggregation'. Some referred to the disaggregation of hardware and software components (i.e. we would refer to as network function virtualisation), others referred to the separation and abstraction of software components (e.g. separating the control plane and user plane functions) or the move to cloud-native functions (i.e. fully containerised, moving to a microservices architecture). There was also some overlap of definitions, we summarise this in the diagram below. Different parts of the network were also cited, from mobile core, transport (IP and optical), aggregation and access (RAN).

There is no consensus on how network disaggregation is defined		These also relate to different drivers that CSPs mentioned		The ultimate objectives can be mapped two key areas	
	% of interviewees focused here*		% of interviewees focused here*		% of interviewees focused here*
Disaggregation of hardware and software *(moving from proprietary hardware to COTS)*	25%	Need for open interfaces	50%	Primarily cost-focused	42%
Disaggregation of software components *(e.g. separation of control and user plane functions)*	66%	Vendor diversification	38%	Primarily innovation-focused	33%
Cloud-native network functions *(fully containerised, microservices architecture)*	50%	Innovation and time to market	33%	Focused equally on both	25%

*n=12, note this is not mutually exclusive

Source: STL Partners interview programme (July 2022)

2. What are the limitations of CNF which Network Cloud resolves?

DriveNets: Latency and efficiency. CNF are located on cloud which requires data to be carried through the entire network from access to cloud which adds latency and overhead to the network. CNF are run on CPU cycles whereas certain functionality which is more traffic handling oriented is better served when it is run on a dedicated network ASIC. When run on networking-optimized hardware, those functions require less footprint and power and can be accommodated in the network edges, in sites with limited space.

3. How do hyperscaler cloud providers play a role in the Network Cloud construct?

DriveNets: The DriveNets Network Cloud is a standalone solution not dependent on hyperscaler cloud. That said, the DriveNets Orchestrator (DNOR) can run on premises or on the public cloud. Certain network functions which are mounted on to a Network Cloud can operate in a hybrid mode where latency sensitive functions reside on a Network Cloud at an edge location while the less latency sensitive or traffic heavy function is carried on to the public cloud.

4. Can you define automation in this context? Is it the automation of the artefacts on the CNFs?

STL Partners: When automation was referred to in our research in the context of cloud-native disaggregation, our interviewees primarily cited automation not only within domains (which some operators have made significant progress on this front) but more so across domains. For example, one group operator we spoke to spoke about moving away from having separate management systems from different vendors for each network function to having a single standardised system to drive much greater automation in the way that operators provision, operate, manage and orchestrate their network (and network services).

DriveNets: Primarily, automation is applied to establishing and maintaining the Network Cloud cluster. Once service instances are being mounted, in most cases they are governed by existing tools which are extended to cover the Network Cloud mounted agents via probes collectives and configuration API from and to the data plane

5. Interestingly the poll indicated leadership buy-in was less of a challenge or barrier for operators but the findings are contrary to what I'm seeing in practice as a supplier. What are your thoughts on this?

Audience poll #3

What is the most pervasive challenge that you are facing in driving cloud-native disaggregation initiatives?
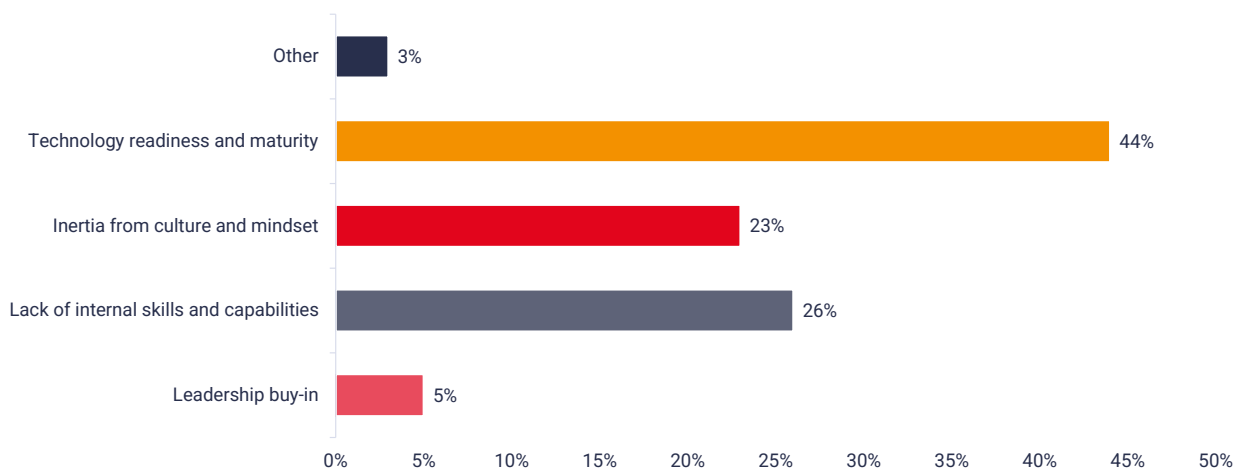
Source: STL Partners webinar (July 2022)

STL Partners: We also found this very interesting, and it may come down to the individuals responding to the poll and which part of the organisation (or value chain) they come from. As we mentioned in the webinar, the common factor amongst operators that were much further ahead in pursuing cloud-native disaggregated networking was the leadership buy-in. This was critical and accelerated the initiatives and efforts from a technology perspective, but also from an operational and cultural perspective.

DriveNets: The benefits of Network Cloud from TCO, innovation and control are very clear from a leadership standpoint so once these are communicated to the right audience the obstacles are removed. We are happy to share collateral relevant to the specific concerns raised by your leadership so they can be onboarded to the disaggregation train. In other words, "take me to your leader"...

6. **What are the risks, challenges and benefits in adopting cloud-native networking and network functions (CNFs) for operators that you see?**

STL Partners: One of the challenges cited in the interview programme is the need for a fundamental mindset change when it comes to the operating model for cloud-native networking. One operator interviewee we spoke to mentioned the need for network redundancy as an example of where and how operators need to change their philosophy when it comes to moving to cloud-native.

In this example, instead of having active-active redundancy or active-passive redundancy to deal with a failure incident, the operator cited the ability to kill an instance and build up a new one within 50ms. Given the level of granularity operators can potentially go down to (i.e. to the subscriber level), operators can automate the recovery process and debug or heal an issue down to a single subscriber.

This referred to the need to embrace a different philosophy in how you deal with incidents in a closed loop fashion without the need for redundancy. In this scenario, operators can reduce the need for duplicating active resources, saving costs and simplifying operations. However, removing such redundancy is often an area of friction for operators from a mindset perspective.

More broadly change is seen as the challenge by some operators rather than the goal when it comes to cloud-native networking.

DriveNets: Risks or challenges are always around when adopting new technology and this is also the case here. Learning curve and adopting a new model which changes fundamentals which exist for many years. The benefit is, quite obviously, breaking these existing paradigms which led service providers to a point where their existence is shrunk to access pipelines while anything else in the "service" is carried by other "providers". Explicitly, the benefits are improved TCO, better control of the network and faster path to innovation

7. **Is Drivenets providing cloud-native Broadband Network Gateway (BNG) solution? Also is there a reference document to see?**

   – **Which software is supported on top of it, is there a reference for that?**

   – **Can you please provide a link or document for to see solution details.**

DriveNets: DriveNets is currently not offering any specific BNG solution. We participated in the open BNG RFI from TIP and we provide a platform which can be added with pure BNG (subscriber management, box sizing, and etc.) attributes. DriveNets will evaluate actual implementations of BNG upon customer demand.

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