CSPs are increasingly interested in Nephio, but vendors must help to realise the vision

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Nephio is an open-source project launched by the Linux Foundation and Google Cloud. It aims to standardise cloud-native automation for the network cloud across multiple domains so that communications service providers (CSPs) can fully realise the benefits of cloud-native architecture. Like all open-source projects, Nephio needs community support, collaboration and active participation to ensure it is a success. Analysys Mason's report, *Assessing market adoption and support for Nephio in developing cloud-native automation*, examines the level of support for Nephio from three categories of vendors: network function providers, cloud infrastructure vendors and OSS/orchestration vendors. These vendors have mixed attitudes towards Nephio and face many challenges in helping bring it to life. However, if they do not actively participate, they risk being left behind by CSPs who are increasingly determined to make their open, cloud-native ideas a reality.

Nephio traction continues to rise as CSP cloud-native ambitions ramp up

Nephio's intent-driven, configuration-as-data, Kubernetes-based approach to cloud-native automation has garnered a lot of industry interest since launching in April 2022. 94% of CSPs globally already know a fair amount about Nephio, and the size of the Nephio community has tripled since launch.

CSPs have historically been open-source shy, but they now understand that their participation is critical to ensure participating vendors meet their demands and requirements. This open-source favourability is further reinforced by the creation of Project Sylva in November 2022 – an open-source initiative aiming to specify a European network cloud, with Nephio earmarked as an automation solution. Deutsche Telekom, Orange, Telefónica, Telecom Italia and Vodafone are at the heart of both Nephio and Project Sylva. These influential CSPs are taking an increasingly active role to ensure their network cloud needs are met. Deutsche Telekom is particularly accelerating its plans for Nephio by committing to a joint innovation partnership with Google Cloud, which involves future trials and potential implementations of Nephio. But it is not just European CSPs who have big plans for Nephio. Bell Canada has already started trialling Nephio via an early release of Google Cloud's Telecom Network Automation solution, which was announced at MWC 2023.

Many CSPs are keen on adopting Nephio as their cloud-native automation standard. In a global CSP survey conducted in December 2022 by Analysys Mason and Google Cloud, we found the biggest barriers to cloud-native automation that respondents struggle with are 'siloed technology and operations' (80% of CSPs selected this) and 'different vendor approaches to automation' (85% of CSPs selected this). Respondents were also asked why they are considering Nephio, and 91% of CSPs said either they want 'open-source standardisation' or to 'future-proof networks against vendor proprietary solutions'.

These CSP attitudes indicate a strong desire to adopt a new automation paradigm for cloud-native networks but are a key reason for vendor participation hesitancy.

Nephio faces headwinds in order to win the support of vendors

While CSP interest is essential in making sure there is a market for Nephio, it is the network function providers, cloud infrastructure vendors and OSS/orchestration vendors that will be responsible for turning these requirements into actual solutions. Nephio and the CSP community now face the challenge of acquiring the full support of these vendors. Each category of vendor has a different level of support for Nephio, depending on the level of threat/opportunity it poses to them, with network function providers being the most resistant.

Cloud infrastructure vendors are the most active contributors to specification and code developments. These vendors are excited about the opportunity to standardise cloud-native automation across network domains (especially the RAN). They are particularly eager to have a common language around cloud-infrastructure management and network function configuration, which will enable them to be more open, and hence attractive to a greater range of potential customers. Network function providers, on the other hand, are taking a more cautious approach. These vendors are concerned about their sunk-cost investments in Helm chart-based automation solutions and the amount of effort and resources it would take to convert these solutions into Nephio custom resource definitions (CRDs). They are also concerned about the threat Nephio poses to their proprietary virtual network function (VNF) managers and Element System Managers (EMS). OSS/orchestration vendors' level of support for Nephio lies somewhere in the middle. They are verbally engaging with the Nephio community but are reluctant to actively contribute until influential network function providers are more committed. Although not discussed in our report, public cloud providers (PCPs) are becoming strong players in the cloud infrastructure market. Having the support of either AWS or Microsoft Azure would greatly enhance Nephio's standing among both CSPs and vendors.

However, in conjunction with their individual set of challenges, vendors are cautiously observing Nephio due to a perceived lack of CSP interest. Each category of vendor has stated that without more engagement from CSPs, they are not prepared to play a more active role in ensuring Nephio's success. They need CSPs to define their cloud-native automation requirements, provide use cases and help in writing code. While CSP apathy has been true to a certain extent, CSPs have clearly reached an inflection point over the course of the last year, and they now understand that persisting with the same business practices will not help them achieve their cloud-native goals.

Vendors that have the most to gain from Nephio should consider playing a more central role in its development

Vendors should appreciate that CSP attitudes towards open-source participation are changing, and the potential market for Nephio continues to grow. CSP standardisation needs can only be addressed by vendors, therefore to better support their customers, vendors need to drive the Nephio community. Cloud infrastructure vendors are increasingly taking on the role of network ecosystem leaders. These vendors have a lot to gain from cloud-native automation standardisation as it makes integrating systems far easier. Similarly, OSS/orchestration vendors currently play influential roles in CSP networks and are in a position to advise their CSP partners on the ideal solution for the specific requirements. However, network function providers face the most challenges with Nephio and need more help to combat the difficult task of converting their current solutions to Nephio-compatible solutions.