Network equipment providers led the 2017 NFV/SDN network automation and orchestration spending

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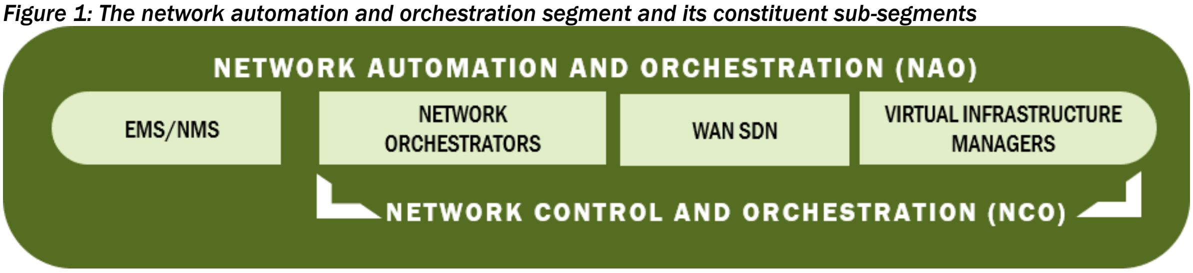
The publication of our 2017 Network Automation and Orchestration (NAO) market share analysis[1] provides a good opportunity to step back and see just how the market has changed in the last few years, and how vendors are performing.

No clear leader with unassailable staying power has emerged in the three small, but fast-growing NFV/SDN-related segments. In total, these segments contributed just under USD1 billion to the total spend in 2017. Network equipment providers (NEPs), led by Cisco, are using their networking expertise to lead network automation deployments. NEC/Netcracker was the only incumbent independent software vendor (ISV) in our NAO top six in terms of market share.

***Figure 1:** The network automation and orchestration segment and its constituent sub-segments*



Source: Analysys Mason

This article summarises the key findings from our recent NAO share report, extends the analysis back to 2015 and provides preliminary analysis for 2018.

NEPs led the market in 2017; some early winners faded

The overall 2017 spending in NAO remained driven by EMS/NMS, which contributed 87% of the USD7.4 billion spent on NAO. The big NEPs' strong positions in EMS/NMS (Huawei, Nokia, Ericsson, Cisco and ZTE were the top five) and the market preference for bottom-up, engineering-led approaches to network automation also strengthened their NCO positions (all but ZTE were in the top five). NEC/Netcracker was the only incumbent ISV in our NCO top six in terms of market share, but it is a special case: two thirds of its NAO revenue came from NEC's NMS.

The EMS/NMS market spend declined by 1.1% year-on-year in 2017. Operators' reduced investments in consumer fixed networks, the slow recovery of the wireless infrastructure market and the shift towards NCO solutions were the main drivers of this decline. The top vendors, unsurprisingly, were all NEPs: Huawei, Nokia, Ericsson, Cisco, ZTE and NEC/Netcracker.

1 See Analysys Mason's Network automation and orchestration: worldwide market shares 2017.

NFV/SDN is being deployed much more slowly than hoped, but related spending increased by 65% to just under USD1 billion

Most NFV deployments in 2017 remained simple, 'virtual box' vEPC and vIMS deployments or enterprise service-focused vCPE/SD-WAN deployments delivered and orchestrated within self-contained, multi-vendor domains (known as 'silos'). Deployments are gradually moving from being virtual boxes to being domain-orchestration-based, but only a few 'true believers' such as AT&T and Telefónica are moving rapidly towards the adoption of full platform-based, multi-domain/-use case NFV/SDN. Nevertheless, the revenue in all NCO sub-segments is growing strongly as vendors productise their solutions.

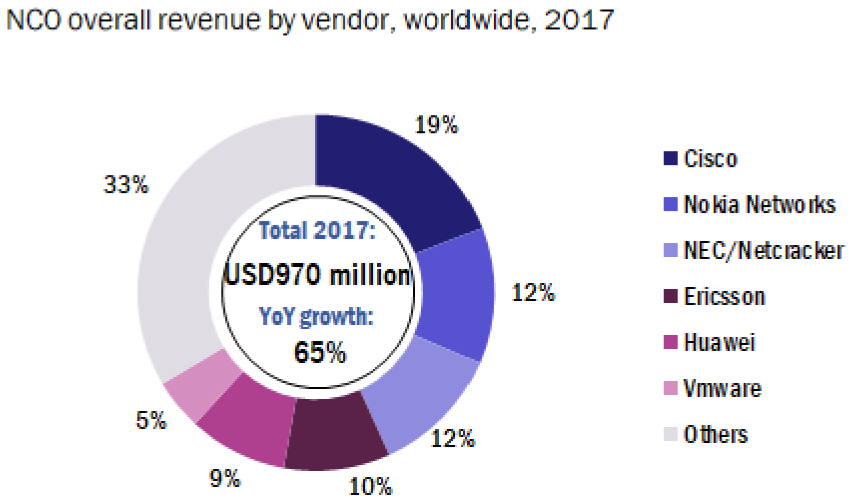
Cisco remains the NCO market leader through WAN SDN primacy

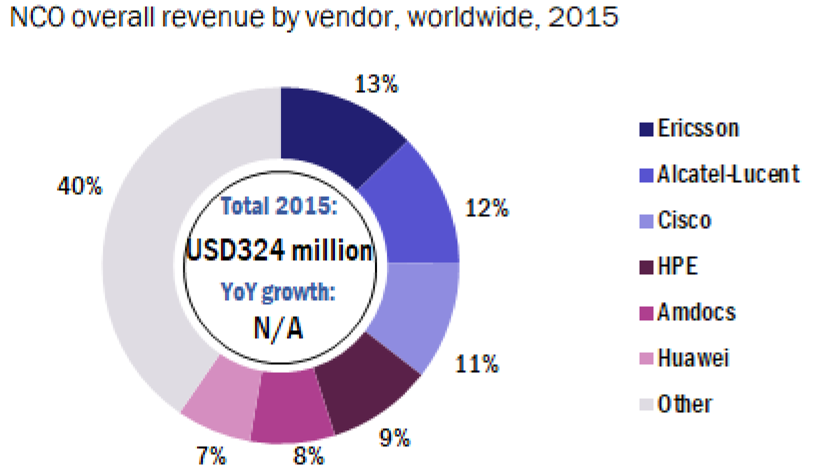
Cisco maintained its NCO leadership due to the strength of NSO's (Cisco's product) WAN configuration capabilities and its growing set of NFV/SDN platform capabilities. Nokia held second place in terms of market share. NEC/Netcracker leap-frogged Huawei and Ericsson to rise to third place thanks to the power of its Hybrid Operations Management solution (part of its Agile Virtualization Platform and Practice) and its ability to monetise its solutions. VMware entered the top six through a combination of its VIM strength and its Velocloud (WAN SDN) acquisition.

Comparing the results from 2017 with those from 2015 (Figure 2) illustrates that a few early leaders have faded because of CSPs' strengthened focus on deployments that favour NEPs. The early wins from Amdocs and HPE and their partnerships with the likes of AT&T and Telefónica, respectively, have not translated into follow-on business on pace with the growth in NFV/SDN market spending. Ericsson remains in the top-six vendors in terms of market share, but its early strength in systems integration and the growing number of vEPC and vIMS deals have not counterbalanced its weakness in WAN SDN. Nokia's success has been helped by its Alcatel-Lucent acquisition, but also by its well-played long game: it was an early proponent of mobile core virtualisation, and it has quickly and consistently brought new automation and orchestration capabilities to the market. NEC/Netcracker's strength in NCO stems from its largely NE-agnostic and domain-centric approach and the flexibility of its VNF licensing. Finally, both Cisco and VMware have acquired SD-WAN companies (Viptela and Velocloud, respectively) that have added to their addressable markets. Cisco, in addition, has expanded the WAN configuration capabilities of its flagship product, NSO, to include a growing set of NFV/SDN platform capabilities.

Other vendors in the NAO top ten are still NCO contenders: Ciena, with strength in packet-optical transport gear and its Blue Planet Intelligent Automation Platform; Samsung, with its LTE and 5G mobile infrastructure focus; Juniper, with its IP/optical gear and Contrail and Northstar WAN SDN and NFV products; and Fujitsu with its packet-optical transport and Virtuora software products.

Figure 2: Comparison of the NCO market share for overall (product and professional services) revenue for the top-six vendors[2]





Source: Analysys Mason

Tomorrow's leading NCO vendors will need to be all-round strong players

The deployment deals and product launches that have been announced in 2018 point to solid, continued growth in all three NCO segments, as well as the decline of EMS/NMS. Vendors that aspire to be NCO leaders must steadily broaden their product and professional services portfolios, adopt a platform strategy, provide flexible delivery (-aaS, hosted) and licensing (success-based, subscription, perpetual) options and be legitimately open to open-source and multi-vendor deployments. A large ecosystem of partners and strong VNF onboarding

2 The top doughnut chart is from the 2017 NAO market share report, and the bottom chart is based on our 2015 share report, in which we only published the rankings. The 2015 data shown here under-represent Cisco's position because we subsequently changed some of our sub-segment definitions. 2014–2015 spending growth is difficult to estimate due to the 2015 segmentation changes.

capabilities are quite important as well. Finally, flexibility is a must. Most CSPs are still confused as to the best way forward given the multitude of vendor approaches and open-source initiatives, and the day-to-day realities of keeping their existing businesses healthy; many are looking for help jumping over the NFV/SDN day one hump. Vendors should expect that how CSPs buy, what they buy and who they buy it from will continue to change. The NCO market is still young. There is plenty of room for NCO specialists (Red Hat leads the VIM market segment, for example), but market leadership will require portfolio strength across NCO.