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RESEARCH FORECAST REPORT

NETWORK MANAGEMENT AND ORCHESTRATION SYSTEMS: WORLDWIDE FORECAST 2016-2020

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About this report

This report provides forecasts for communications service provider (CSP) spending on telecoms-specific network management and orchestration software systems and related services for 2016–2020. It provides details on spending by delivery type, service type, sub-segment and region. The report also provides recommendations for how vendors and CSPs can best take advantage of the shift from physical to virtual networks.

The report is based on several sources, including:

- Analysys Mason’s strategy reports and other analysis developed during the past year
- interviews with CSPs and vendors worldwide.

KEY QUESTIONS ANSWERED IN THIS REPORT

- What are the key trends and factors that will impact the network management and orchestration market between 2016 and 2020?
- What are the growth rates in each of the sub-segments?
- What are the regional factors that will drive growth?
- What should vendors do to exploit new business opportunities?
- How will professional services for network management and orchestration perform over the forecast period?
- What are the major drivers and inhibitors that will influence CSP spending on network management and orchestration?

GEOGRAPHICAL COVERAGE

- Worldwide
- Central and Eastern Europe
- Developed Asia–Pacific
- Emerging Asia–Pacific
- Latin America
- Middle East and North Africa
- North America
- Sub-Saharan Africa
- Western Europe

SUB-SEGMENT COVERAGE

- For classic network management systems (NMS): business fixed, business wireless, consumer fixed and consumer wireless.
- For virtual next-generation NMS (vNGN-NMS) network management and orchestration (NOM): network orchestration (NO); SDN controllers (SDN-C); virtual infrastructure management (VIM).

WHO NEEDS TO READ THIS REPORT

- Vendor strategy teams that need to understand how spending is shifting from single-vendor network equipment provider (NEP) NMS/element management systems (EMS) to multi-vendor management and orchestration systems.
- Product management teams responsible for feature functionality and geographical focus, and product marketing teams responsible for growth.
- CSPs that are planning network function virtualisation (NFV)/software-defined networking (SDN), and digital transformation journeys, and want to ensure they remain up to date.
- Professional services vendors that want to understand the growth opportunities over the next 5 years.

Dashboard: Network management and orchestration systems worldwide forecast

KEY MARKET TRENDS FOR 2016-2020

- Consumer wireless NMS revenue will decline because major LTE deployments and upgrades are now complete in most markets. The overall wireless market will stabilise and return to growth with cloud-RAN and IoT/M2M (business wireless NMS) investments after 2018.
- CSPs' investment focus on vNGN-NMS NOM will increase as they orchestrate and automate their NFV/SDN virtualised networks.
- Video and data centre connectivity traffic will generate sustained growth in residential and business fixed NMS sub-segments.

Figure 2: Network management and orchestration systems overall revenue, worldwide, 2015-2020

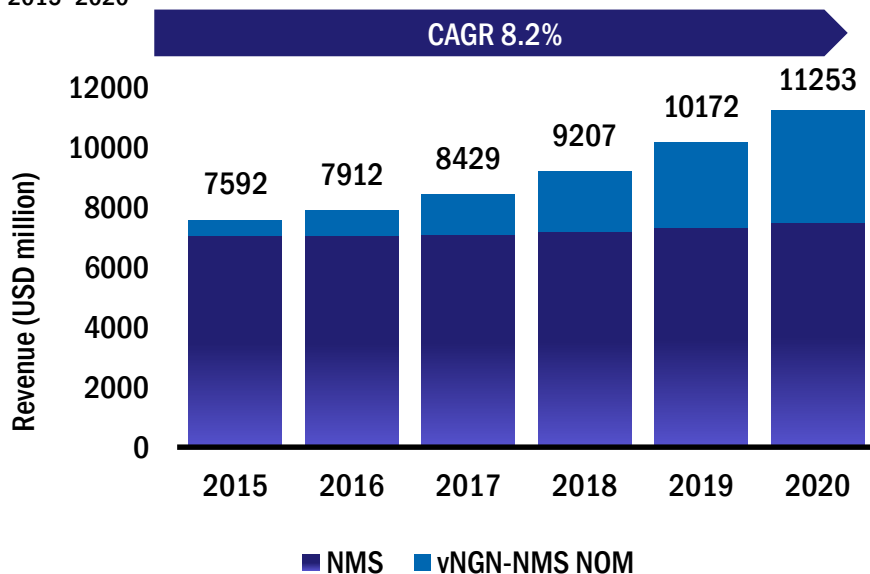


Figure 3: Network management and orchestration systems overall revenue by delivery type, worldwide, 2015-2020

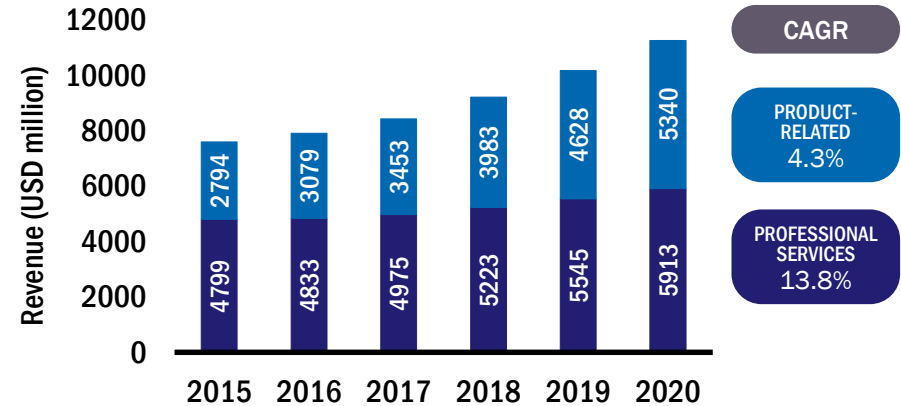
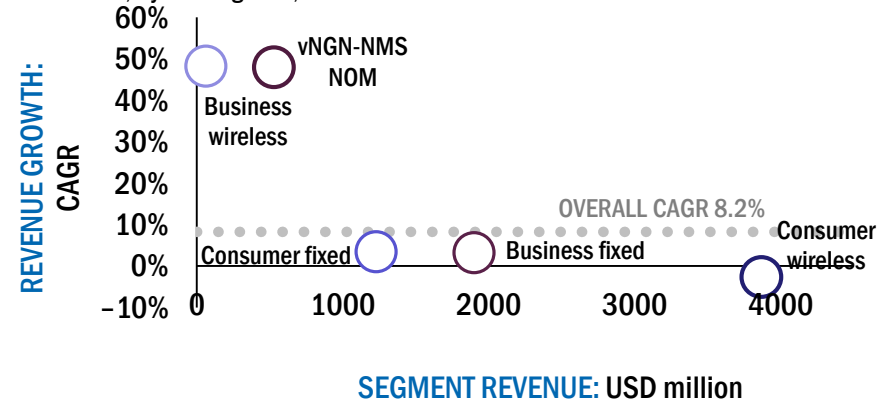


Figure 4: Network management and orchestration systems overall revenue 2015 and CAGR 2015-2020, by sub-segment, worldwide



Recommendations for CSPs

1

CSPs will need to ensure that their current network management systems are upgraded in order to work with network orchestrators to support management of hybrid physical-virtual networks.

Most initial software-controlled networking (SCN) implementations that are not service-focused will be lifecycle or capacity upgrades, and will need to co-exist with existing physical network elements to provide a single network service. NMS and vNGN-NMS will need to share information to achieve customer and today's operations objectives and to support more-complete vNGN transformations in the future. SI services can help de-risk these efforts.

2

CSPs should not go too far down the network virtualisation path without implementing a network orchestration strategy.

Some CSPs have explained to us that VIM and VNFM are adequate for supporting their cloudification efforts, and that a full network orchestration approach is not needed. This may be true for single-domain infrastructure virtualisation efforts such as vIMS and vEPC, but more-complex, service-focused use cases require a more-automated, programmable approach that requires cross-domain network orchestration and SDN control.

3

CSPs should, for now, maintain a dual focus on reaping rapid returns and moving towards a strategic platform.

CSPs that want to reap the near-term revenue benefits of virtualisation are choosing vertically integrated, service-focused solutions (for example, SD-WAN) and adding programmability to existing physical networks. Service-agnostic, multi-vendor horizontal platforms that support a more-programmable, extendable network will follow, but are difficult to justify in a business case due to the market's current immaturity. Nevertheless, CSPs must take care not to recreate the 'new service, new management stack' sins of old, or they will limit the benefits of automation.

Recommendations for vendors

1

Flexibility is a critical organisational attribute for SIs and product vendors during the NMS to vNGN-NMS shift.

NEPs can emphasise their network credibility and why they are best-placed to manage hybrid vNGNs; ISVs and IT vendors can emphasise their distinct expertise in software and their new approach to CSPs' network- and service-management and abstraction challenges; and systems integrators can emphasise their best-of-breed approach. Vendors must anticipate and change their go-to-market models to account for open source, containers, and other approaches, and also need to acquire each others' skillsets to address hybrid networks and the migration.

2

Vendor professional service (PS) offers can help CSPs to overcome initial vNGN-NMS investment hurdles.

SIs, NEPs, ISVs and IT vendors that offer extensive professional services can lower the risk of CSPs' forays into NFV/SDN management and control through consulting, testing and certification, VNF onboarding and multi-vendor and hybrid physical-virtual network integration services. PS will be particularly attractive to Tier 2/3 carriers that are reluctant to launch vNGN transformations or even new NFV/SDN-supported services without a partner that can lower their investment risk. Hence, we anticipate a cumulative PS-to-product spend ratio of 1.9 (2016-2020).

3

Vendor marketing messages should help CSPs to cut through the market clutter and confusion.

CSPs are bombarded by conflicting messages regarding the evolution of NMS to vNGN-NMS. Some non-NEP vendors simply ignore the installed base of physical elements and EMS/NMS, but this is a mistake given how long hybrid networks will be in operation. A consultative approach with CSP customers that emphasises business case quantification, implementation and integration assistance, as well as the open and modular design factors underlying NOM products will increase CSP confidence and willingness to invest by lowering the perceived risk of decisions.

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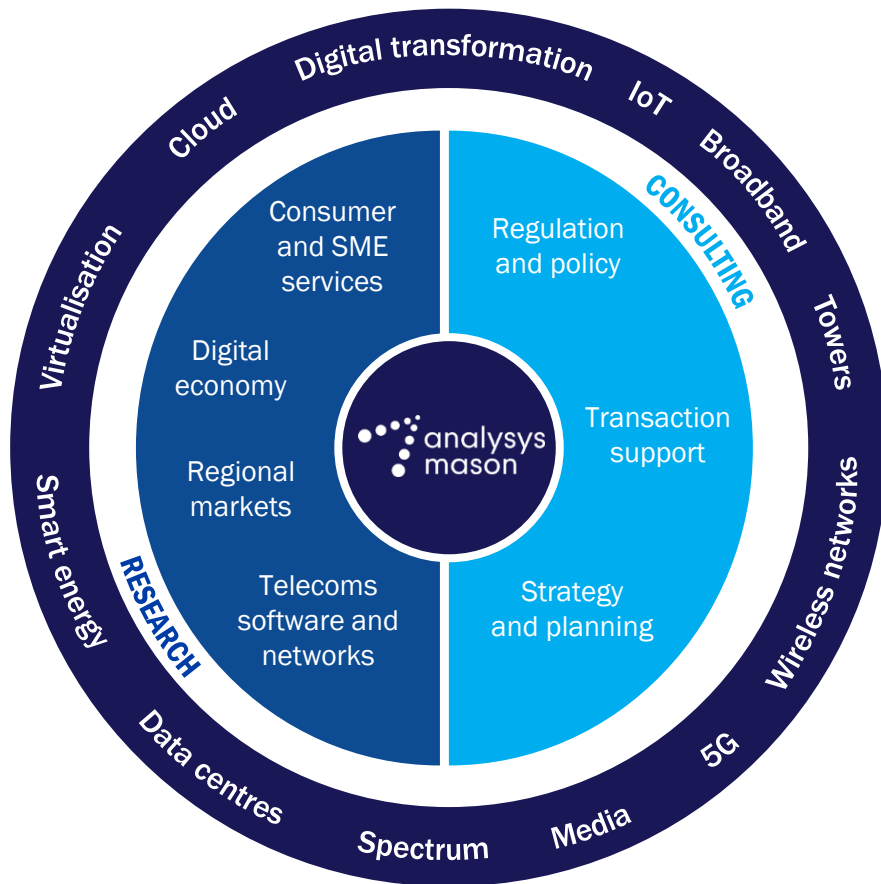
Dana Cooperson (Research Director) is the research director for Analysys Mason's network-focused software research programmes. Her area of expertise is intelligent fixed and mobile network infrastructure. Her goal is to help customers strengthen their link in the communications value chain while evolving their business operations to benefit from, rather than be threatened by, shifts in the market. The key network infrastructure trends Dana focuses on include the integration of communications and IT assets and the drive towards software-controlled, virtual networking.



Caroline Chappell (Principal Analyst) is the lead analyst for Analysys Mason's *Software-Controlled Networking* research programme. Her research focuses on service provider adoption of cloud and the application of cloud technologies to fixed and mobile networks. She is a leading exponent of SDN and NFV and the potential that these technologies have to enhance business agility and enable new revenue opportunities for service providers. Caroline investigates key cloud and network virtualisation challenges, and helps telecoms customers to devise strategies that mitigate the disruptive effects of cloud and support a smooth transition to the era of software-controlled networks. Caroline has over 25 years' experience as a telecoms analyst and consultant.

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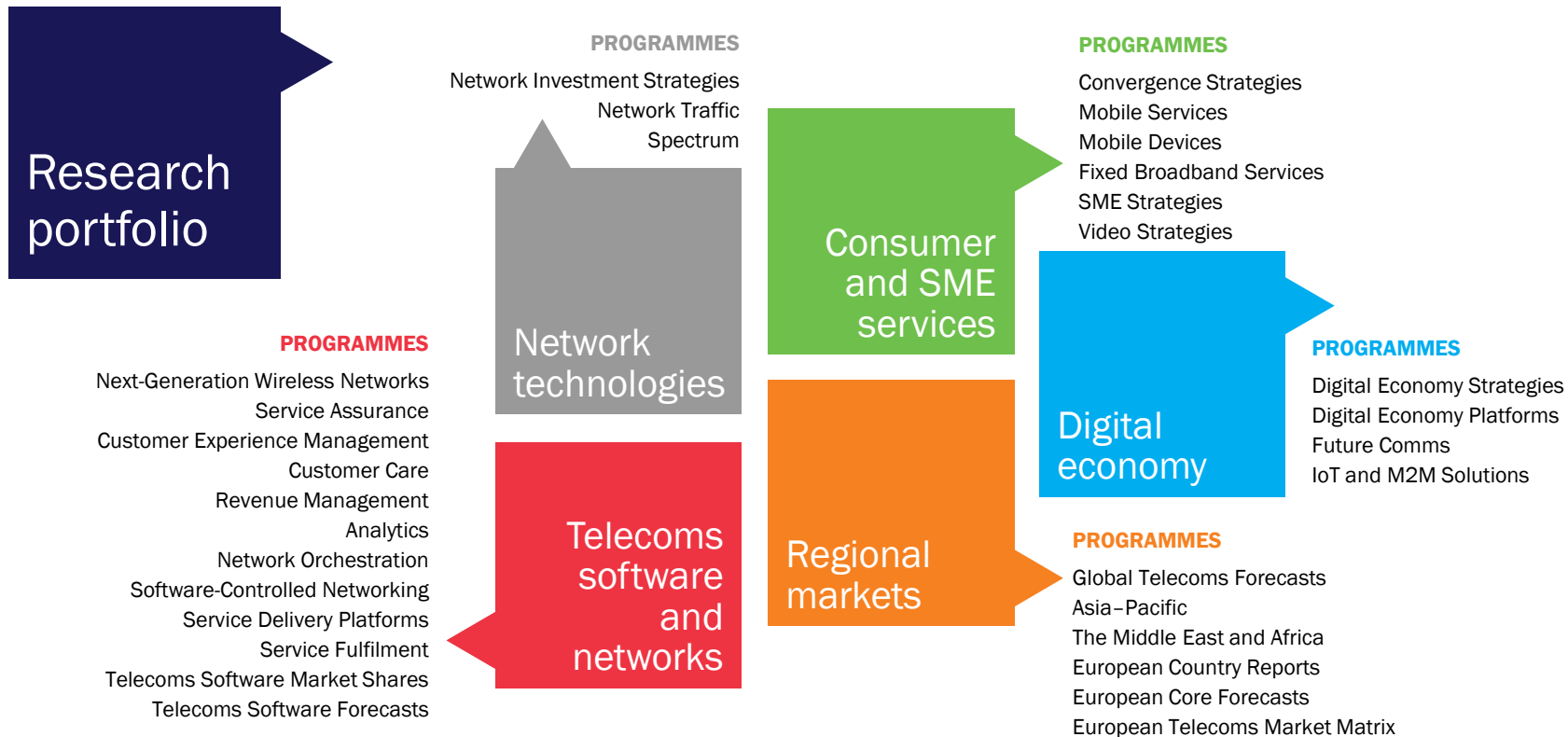
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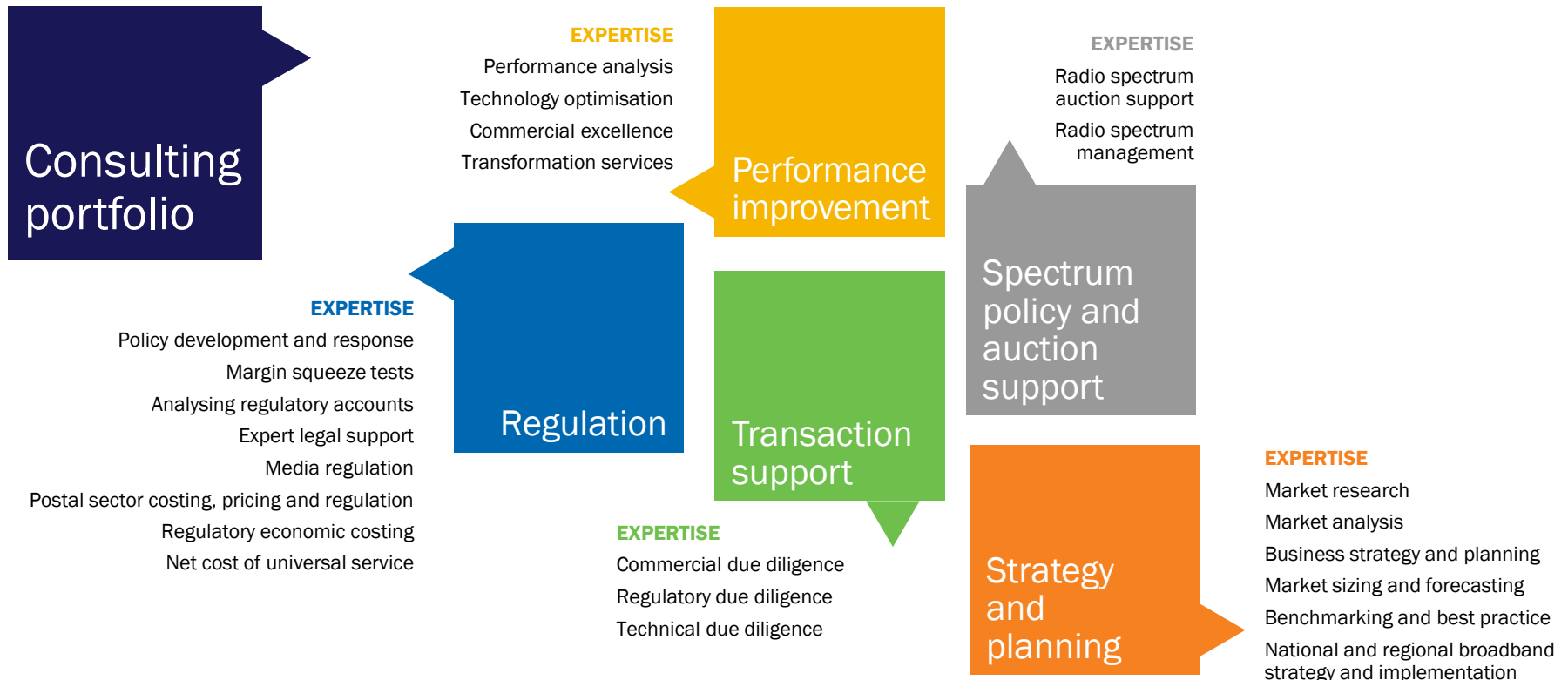
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