RESEARCH

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Service design and orchestration: worldwide forecast 2018–2022

Anil Rao

About this report

This report provides forecasts for communications service provider (CSP) spending on service design and orchestration software systems and related services for 2018–2022. 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 benefit from the changing nature of service design and orchestration software.

The report is based on several sources, including:

- Analysys Mason's research from the past year
- interviews with CSPs and vendors worldwide.

KEY QUESTIONS ANSWERED IN THIS REPORT

- What are the key trends and factors that will affect the service design and orchestration software systems market during 2018–2022?
- 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 service design and orchestration software systems perform during the forecast period?
- What are the major drivers and inhibitors that will influence CSP spending on service design and orchestration software systems?

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

- Activation
- Inventory management
- Engineering systems
- Order management

WHO SHOULD READ THIS REPORT

- Vendor strategy teams that need to understand where growth is slowing and where it is increasing, according to different sub-segment categories.
- Product management teams responsible for feature functionality and geographical focus, and product marketing teams responsible for market-share growth.
- CSPs planning network function virtualisation (NFV)/software-defined networking (SDN) and digital transformation journeys.

Three key trends expected during 2018–2022

1

Scaling and automation of design time operations of NFV and hybrid services.

Many advanced CSPs are likely to scale up and automate their design time operations which include aspects such as service design and packaging, VNF onboarding and lifecycle management, and multi-domain service orchestration. Automation of design time operations will be made possible by the application of intent-driven and DevOps paradigms, and will be key to ultimately achieving service agility benefits.

2

Evolution of inventory management systems to cater to NFV/SDN-based networks.

Current inventory management systems were designed for traditional static networks, and cannot satisfy the new demands of dynamic NFV/SDN and cloud-native networks. CSPs will need a near-real-time view of the available network resources, and will need to have the correct network and service topology to fully implement intent-driven networking and service orchestration.

3

Network roll-outs of fibre, 5G new radio (NR) and 5G fixed–wireless access (FWA).

We forecast that there will be a fresh wave of investments in fibre both for traditional residential broadband services and for the backhaul/fronthaul capacity upgrades for 5G. Additionally, starting in late 2019, many advanced CSPs will begin 5G new radio roll-outs. 5G FWA is another area of interest among some advanced CSPs. Together, these roll-outs will increase the demand for network planning and provisioning software.

Recommendations for CSPs

CSPs should automate design time operations to deliver a superior customer experience and support NFV at scale.

NFV promises service agility, which provides significant competitive and operational advantages to CSPs. However, most of the automation associated with NFV is currently focused on resources and runtime, that is, in the NFV orchestration layers. To fully translate service agility into direct customer benefits, CSPs must automate the design time operations, in order to deliver real-time digital experiences that are the hallmark of hyperscale companies.

CSPs should procure network planning and optimisation systems that cater for a broad range of heterogeneous networks.

The new 5G networks will coexist with a plethora of access technologies including LTE, small cells, Wi-Fi and unlicensed spectrum. Fibre adds another layer of complexity as 5G and virtual RAN/cloud RAN introduces new demands on backhaul and fronthaul networks. Automation of planning and optimisation will be key for CSPs as it would be extremely difficult to perform manual optimisation of the emerging complex heterogenous networks.

CSPs should perform a thorough assessment of the installed fulfilment systems estate and develop a strategy to make it fit for purpose for NFV, SDN and 5G.

Most CSPs accept that they must eventually deploy NFV and cloud-native networks at scale; some CSPs have already begun this journey. However, there has been very limited progress in defining a roadmap for the higher-layer OSS systems. The need for a new approach to fulfilment is clear, but CSPs need to urgently assess their current situations, define the desired future architecture and devise a transformation plan to achieve it.

Recommendations for vendors

Vendors should develop SDO solutions that demonstrate a clear evolutionary path towards the automation of design time operations.

Vendors can enhance their competitive position by showing a willingness to partner with CSPs and sharing some of the risks associated with NFV operationalisation. Offering a full portfolio of products and professional services designed to carry the CSP from the 'as-is' operational state to the desired end point with intent-based automated design time operations can increase vendor partners' credibility.

Vendors should explore high-value opportunities to apply ML/AI techniques in SDO solutions.

Use cases associated with the intelligent automation of network planning and optimisation are the most appropriate for the application of ML/AI techniques. ML-powered multi-domain service orchestration systems can bolster service-level closed-loop assurance routines and significantly increase the level of operational automation. Self-optimising networks (SONs) are another potential area for the application of ML/AI.

Vendors should devise an open-source strategy and be ready for open-source tools to disrupt the existing business.

Many CSPs have demonstrated a desire to implement open-source software and platforms in their operational environments; the extent and scale at which this will happen varies between CSPs. CSPs' rising interest in open-source initiatives such as ONAP and OSM means that vendors need to develop a strategy to incorporate these initiatives and find a way to be commercially successful at the same time.

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About the author

Anil Rao (Principal Analyst) is the lead analyst for the ***Automated Assurance*** and ***Service Design and Orchestration*** research programmes, covering a range of topics on the existing and new-age operational systems that will power operators' digital transformations. His main areas of focus include service creation, provisioning and service operations in NFV/SDN-based networks, 5G, IoT and edge clouds; the use of analytics, ML and AI to increase operations efficiency and agility; and the broader imperatives around operations automation and zero touch networks. He produces quantitative and qualitative research for both programmes, and works with clients on a range of consulting engagements such as strategy assessment and advisory, market sizing, competitive analysis and market positioning, and marketing support through thought leadership collateral. He holds a BEng in Computer Science from the University of Mysore and an MBA from Lancaster University Management School, UK.

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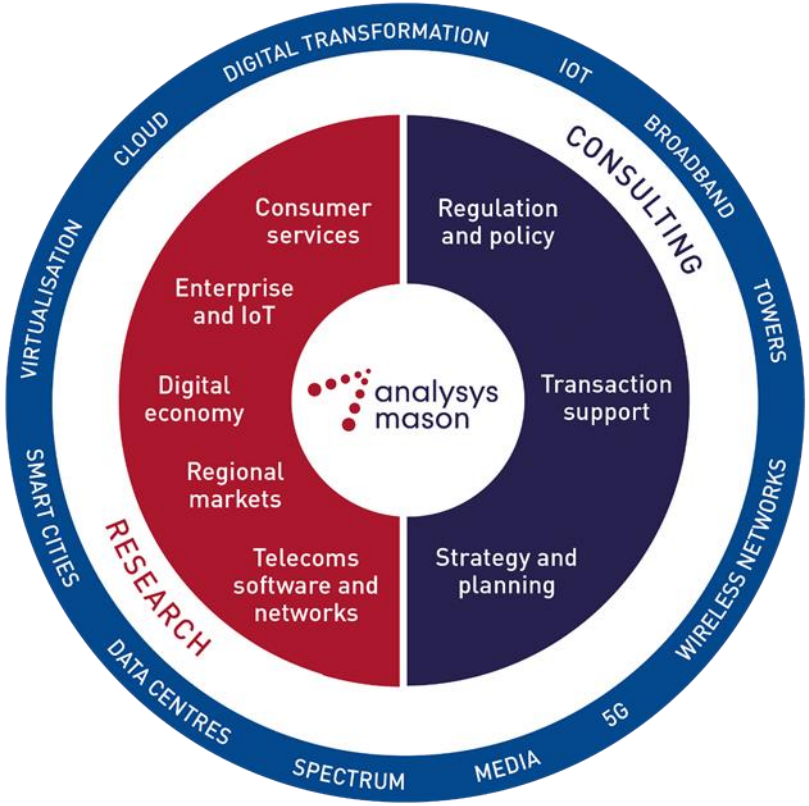

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