RESEARCH FORECAST REPORT

TELECOMS SOFTWARE: CONSOLIDATED WORLDWIDE FORECAST 2017–2021

LARRY GOLDMAN, DON ALUSHA, JUSTIN VAN DER LANDE, ATUL ARORA, ANIL RAO, GORKEM YIGIT, JOHN ABRAHAM, DANA COOPERSON, CAROLINE CHAPPELL and DR MARK H. MORTENSEN

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About this report

This report provides forecasts for communications service provider (CSP) spending on telecoms-specific software and related services, including in the traditional BSS and OSS application categories. It provides details of how spending will vary by delivery type, service type and regions. The report also provides recommendations for how vendors and CSPs can approach the demands of the telecoms industry.

The report forecasts spending in each of the specific segments covered in the Analysys Mason telecoms software taxonomy. This report is a consolidation of published reports in all software segments and an overall forecast.

KEY QUESTIONS ANSWERED IN THIS REPORT

- What is the overall size of the telecoms software market?
- What are the key drivers of change in the next 5 years?
- What are the different drivers and growth rates of CSP spending on software products and related professional services?
- How does spending vary according to major application segment, region and service type?
- What are the major drivers and inhibitors that will affect growth rates in the telecoms industry?

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

SEGMENT COVERAGE

- Analytics
- Customer care
- Service assurance
- Service fulfilment
- Service delivery platforms
- Revenue management
- Network orchestration and management systems
- Software-controlled networking

WHO NEEDS TO READ THIS REPORT

- Product management teams responsible for feature functionality and geographical focus, and product marketing teams responsible for market share growth.
- CSP strategists will understand where technology innovations are creating disruption, and understand key areas they should focus on as they set out in their digital transformation journeys.
- Vendor strategy teams will see where growth is slowing and where it is increasing according to different segments, regions and service types.
- Professional services vendors that want to understand the growth opportunities for the next 5 years.

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Three key trends expected during 2017–2021

1

CSPs are applying new web-scale technologies to old operating methods

Internet-driven software innovations promise to revolutionise telecoms operations and systems. However, it will take a long time for these new approaches to predominate in CSPs' operations and their spending for software. Throughout the 5-year forecast period covered in this report, CSPs will deal with old-style systems and operations and will gradually, but not completely, shift to a new Internet-scale approach.

2

Adoption of SaaS models has been limited, but it is gradually increasing

CSPs' determination to reconfigure their cost base, coupled with a growing confidence in cloud-based solutions, is driving growth of SaaS models. Vendors are constantly bolstering their software and services businesses and, to ensure more-stable revenue, they are making more of their products available as a subscription. CSPs are beginning to embrace this model in order to mitigate loss of revenue in a highly competitive market.

3

Demand for professional services that go beyond technology integration, but add business value

As CSPs adopt new technologies and rethink the way they use new methods like open source, they will continue to heavily depend on professional services, but the mix will shift. SIs will see more opportunities in the network. Managed services will shift to cloud computing. Professional services companies have many opportunities but they will have to dramatically retool to be adept with the new Internet-driven technology and methods.

Dashboard: Telecoms software worldwide forecast

KEY MARKET TRENDS FOR 2017–2021

- CSPs will have little overall revenue growth. Therefore, growth in software spending will be low.
- The greatest change in spending involves virtualising networks. Traditional hardware spend shifts toward more software spending.
- Customers' expectations of the digital experience leads to shifting spending in traditional BSS as CSPs press to meet those expectations around existing services.

Figure 3: Telecoms software overall revenue, worldwide, 2016–2021

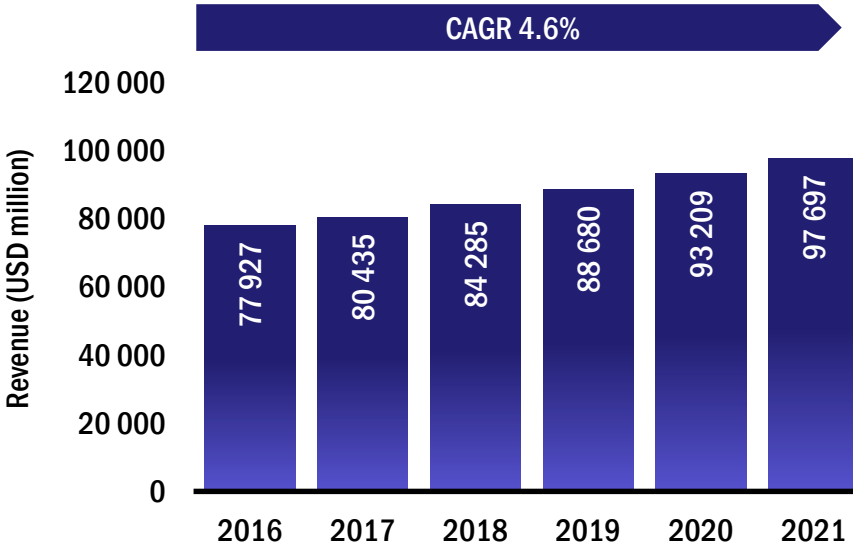


Figure 4: Telecoms software overall revenue by delivery type, worldwide, 2016–2021

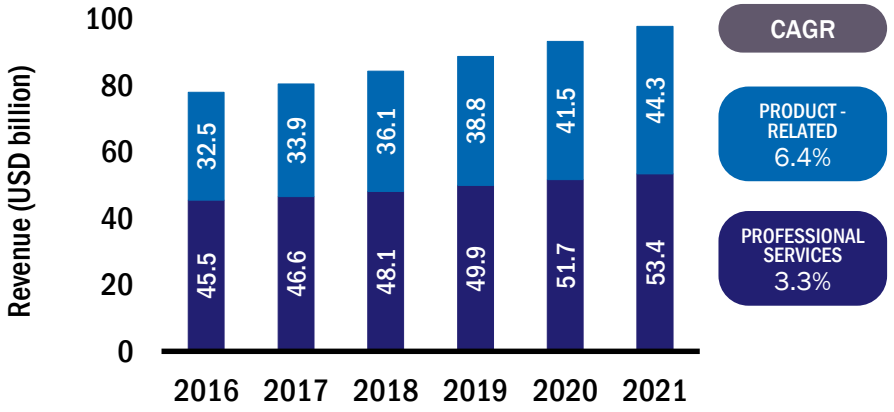
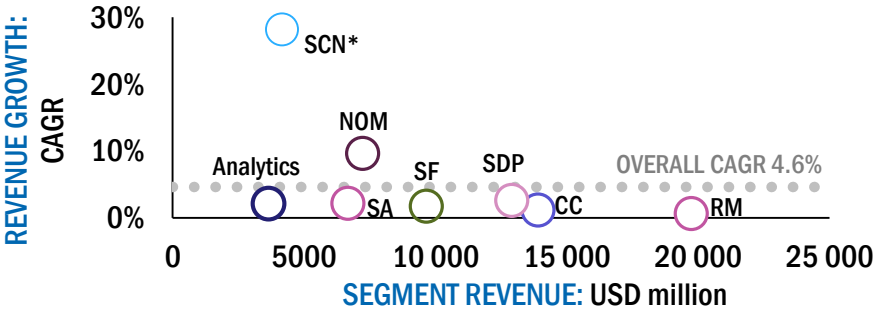


Figure 5: Telecoms software overall revenue 2016, and CAGR 2016–2021, by segment, worldwide



Key: CC = customer care; NOM = network orchestration and management; RM = revenue management; SA = service assurance; SCN = software-controlled networking; SDP = service delivery platforms; SF = service fulfilment;

*This is a subset of overall SCN forecast. Please see SCN forecast for the complete data set.

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About the authors

Larry Goldman (Head of Telecoms Software Research) leads Analysys Mason's work in telecoms network and software research. His current focus is service provider digital transformation. He co-founded OSS Observer, now part of Analysys Mason. Larry has over 30 years' experience in telecoms networks and software. Before founding OSS Observer in 2003, he was OSS Program Director at research firm RHK. Prior to joining RHK, he was Director of the Network Solutions Group at Tellabs (now Coriant), managed OSS development at GTE (now Verizon), and spent 12 years at Hewlett-Packard, where he was a manager responsible for telecoms-related software development. Larry is a frequent speaker at industry conferences..

Don Alusha (Analyst) is part of the OSS practice in Analysys Mason's Telecoms Software research team, contributing to the *Service Delivery Platforms*, *Service Assurance*, *Service Fulfilment* and *Software-Controlled Networking* research programmes. His areas of interest include computer and network security, the digitalisation of communications service providers' (CSPs') systems, and the evolution of software architecture in cloud computing deployments. He holds an MSc with Distinction in Computing, IT Law and Management from King's College London, and a first-class honours BSc degree in Business Computing Systems from City, University of London.

About the authors

Atul Arora (Senior Analyst) is the lead analyst for the *Customer Care* programme and a contributor to the *Digital Experience*, *Software Forecast and Strategy* and *Telecoms Software Market Shares* programmes. His areas of interest include the digitalisation of CSPs' customer engagement systems, omni-channel commerce and care and CSPs' use of social media. Atul also works on custom projects for telecoms operators and vendors, which include providing strategic advisory and undertaking market assessment work. He holds an MSc in Neuroscience from University College London and a bachelor's degree from Jaypee University (India).

Anil Rao (Principal Analyst) is a member of Analysys Mason's Telecoms Software research team and is the lead analyst for the *Service Assurance* programme, focusing on producing market share, forecast and research collateral for the programme. He has published research on IP probes, real-time network analytics and the importance of service assurance in reducing churn and improving customer experience. He holds a BEng in Computer Science from the University of Mysore and an MBA from Lancaster University Management School, UK.

Justin van der Lande (Principal Analyst) leads the *Analytics*, *Digital Experience* and *CSP IT Strategies* research programmes, which are part of Analysys Mason's Telecoms Software research stream. He specialises in business intelligence and analytics tools, the functionality of which cuts across all of the research programmes in this area. He also provides project management for large-scale projects within our Telecoms Software research. Justin has more than 20 years' experience in the communications industry in software development, marketing and research. He has held senior positions at NCR/AT&T, Micromuse (IBM), Granite Systems (Telcordia) and at the TM Forum. Justin holds a BSc in Management Science and Computer Studies from the University of Wales.

About the authors

Gorkem Yigit (Senior Analyst) is the lead analyst for the *Service Delivery Platforms* programme and a contributor to the *Software-Controlled Networking* and *Network Orchestration* programmes, focusing on producing market share, forecast and research collateral. He started his career in the telecoms industry with a graduate role at a leading telecoms operator, before joining Analysys Mason in late 2013. He has published research on NFV/SDN services business cases, identity management in the digital economy, and has been a key part of major consulting projects including Telco Cloud Index and IPTV/OTT procurement. He holds a cum laude MSc degree in Economics and Management of Innovation and Technology from Bocconi University (Milan, Italy).

John Abraham (Senior Analyst) is a senior analyst within Analysys Mason's Telecoms Software and Networks Research team. He leads our *Revenue Management* programme and our research into digital experience for monetisation platforms, as part of the *Digital Experience* programme. John also contributes to our research into cloud-native architecture models, which is covered as part of the *Software-Controlled Networking* programme. John has been part of the telecoms industry since 2006, and joined Analysys Mason in early 2012. He has worked on a range of telco projects for operators in Africa, Europe, India and the Middle East. Before joining Analysys Mason, he worked for several years for a BSS vendor and before that for Dell Inc in India.

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.

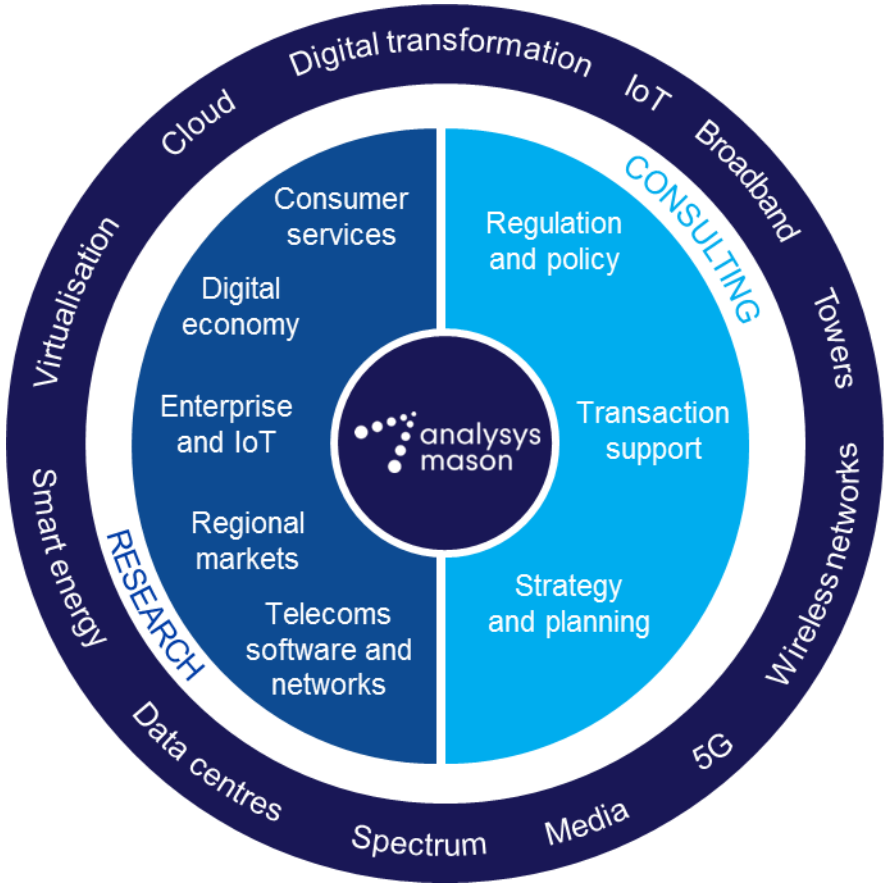
About the authors

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.

Mark H. Mortensen (Research Director) is the Research Director and Practice Head for customer-facing systems in Analysys Mason's *Telecoms Software and Networks* research stream. He is also the lead analyst for the *Digital Experience* research programme. His interest areas include the conversion of CSPs to modern DSP operations, the effect of network virtualisation on operations, and the evolution of software architectures in the cloud world.

Analysys Mason's consulting and research are uniquely positioned

Analysys Mason's consulting services and research portfolio



CONSULTING

- We deliver tangible benefits to clients across the telecoms industry:
  - communications and digital service providers, vendors, financial and strategic investors, private equity and infrastructure funds, governments, regulators, broadcasters, and service and content providers
- Our sector specialists understand the distinct local challenges facing clients, in addition to the wider effects of global forces.
- We are future-focused and help clients understand the challenges and opportunities that new technology brings.

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- We offer detailed insight into the software, infrastructure and technology delivering those services.
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- Fixed Broadband Services
- Convergence Strategies
- Video Strategies

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- Network Traffic
- Spectrum

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- Software Forecast and Strategy
- Telecoms Software Market Shares

Network-focused
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- Service Delivery Platforms
- Service Fulfilment
- Service Assurance
- Network Orchestration
- Software-Controlled Networking

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- Revenue Management
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- Large Enterprise Emerging Service Opportunities
- SME Strategies
- IoT and M2M Services
- IoT Platforms and Technology

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- Future Comms

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- Americas
- Asia–Pacific
- Middle East and Africa
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- European Telecoms Market Matrix
- European Country Reports

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- +1400 forecast and +250 historical metrics
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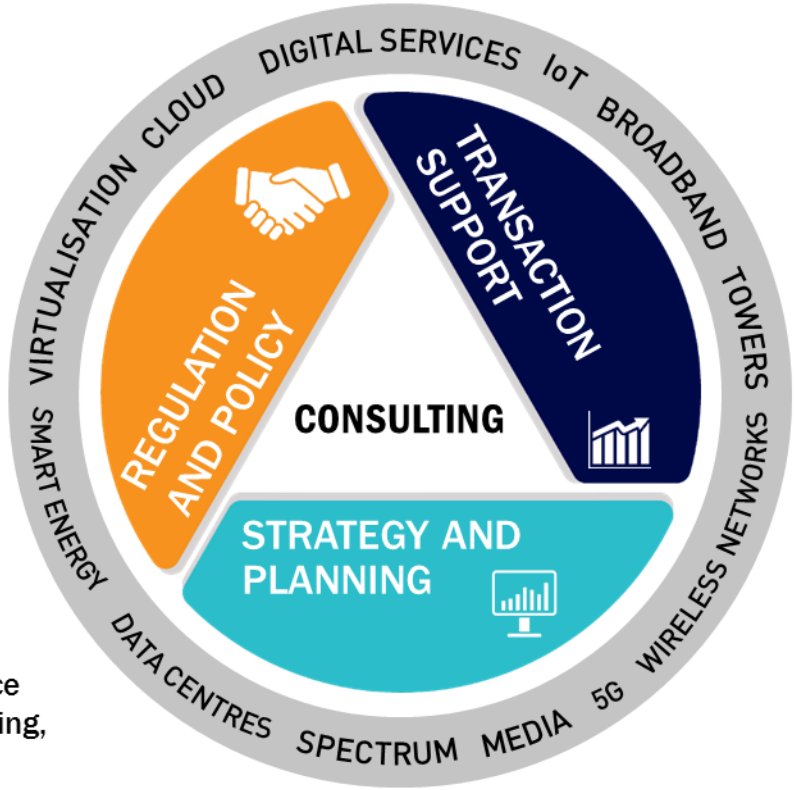
Consulting from Analysys Mason

REGULATION AND POLICY

- Quality of service
- Market review
- Margin squeeze tests
- Analysing regulatory accounts
- Regulatory economic costing
- Policy development and response
- Media regulation
- Expert legal support
- Radio spectrum management
- Net cost of universal service
- Radio spectrum auction support
- Postal sector policy: universal service obligation (USO), liberalisation, costing, pricing and regulation



TRANSACTION SUPPORT

- Commercial due diligence
- Technical due diligence
- Mergers and acquisitions (M&As)
- Debt and initial public offerings (IPOs)
- Joint-venture (JV) structuring
- Mid-market financial sponsors

STRATEGY AND PLANNING

- Commercial expertise
- Technology optimisation
- New digital frontiers

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Bush House • North West Wing • Aldwych • London • WC2B 4PJ • UK

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