

About this report

This report provides market share data for communications service provider (CSP) spending on telecoms-specific monetisation platforms software systems and related services for 2021. It provides details of how the spending varied by delivery model, vendor and region. The report also includes profiles of the leading vendors in the market.

It is based on several sources, including:

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

KEY QUESTIONS ANSWERED IN THIS REPORT

- What was the overall size of the market (monetisation platforms software systems for the telecoms industry) and what drove this spending among CSPs?
- Who are the major vendors and what is their share of revenue in the monetisation platforms systems market?
- What are the different drivers and growth rates of CSP spending on products and professional services?



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



WHO SHOULD READ THIS REPORT

- Vendor strategy teams that need to understand how spending is shifting as CSPs seek to reduce spending on legacy systems and invest in adopting modern architecture frameworks.
- Product management teams that are responsible for feature functionality and geographical focus, and product marketing teams that are responsible for growth.
- CSPs that are planning to revamp their monetisation platforms and advance their digital transformation journeys.
- Professional services vendors that want to understand the growth opportunities over the next 5 years.



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CSPs continue to focus on the twin goals of improving efficiency and upgrading the capabilities of their legacy monetisation platforms

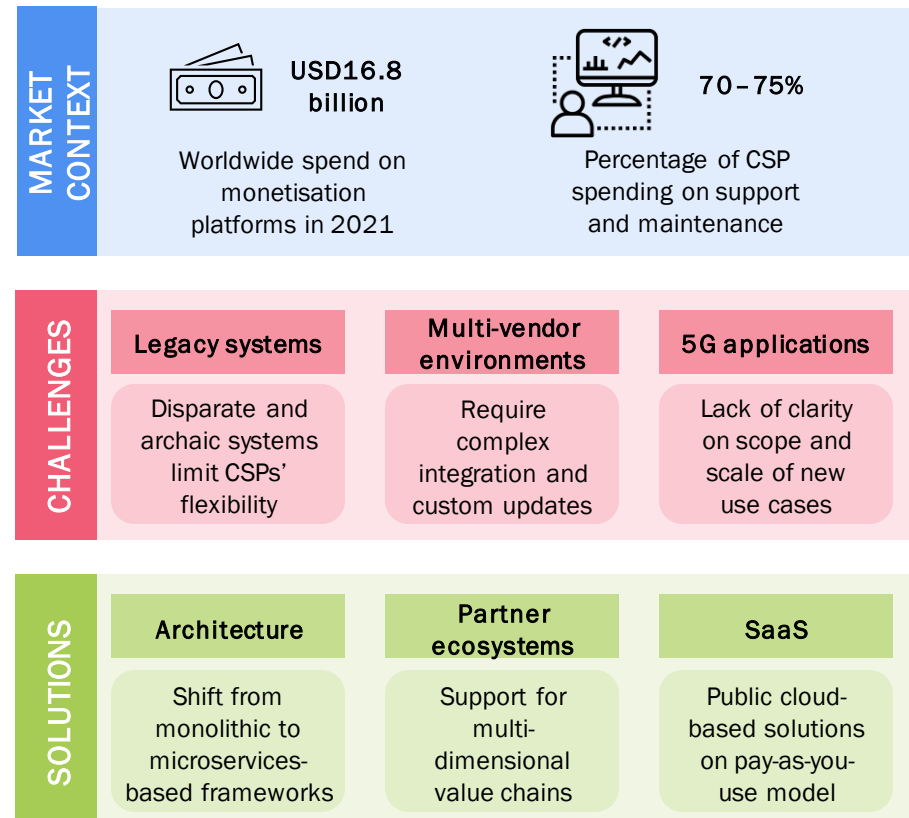
The streamlining of legacy systems and the adoption of cloud-based technologies are driving spending in this segment.

Total spending on monetisation platforms increased slightly in 2021 as CSPs continued to overhaul their incumbent legacy systems. High support costs and the lack of agility associated with legacy systems are the primary concerns that are driving CSPs to transform their monetisation platforms.

This is particularly true in the case of the billing and charging sub-segment, which accounts for 70% of all monetisation platforms spending. Legacy billing and charging systems are mostly on-premises, and CSPs are prioritising the adoption of cloud-native-compliant, microservices-based architecture to transform these systems. Multi-vendor environments are another challenge, especially because the introduction of new capabilities will require additional customisation and integration. This is one reason why professional services account for a significant portion of the overall spend in this segment. Complex architecture has driven many CSPs to retain managed services contracts, although the duration of such contracts have fallen from 5–7 years to 2–4 years.

There has been an increase in the number of real-time mission-critical monetisation platform applications that are deployed on the public cloud and delivered as SaaS. CSP spending on such SaaS-based solutions has increased, although it is far from becoming the dominant delivery model in the segment.

Figure 1: Overview of the monetisation platforms segment in 2021



Source: Analysys Mason

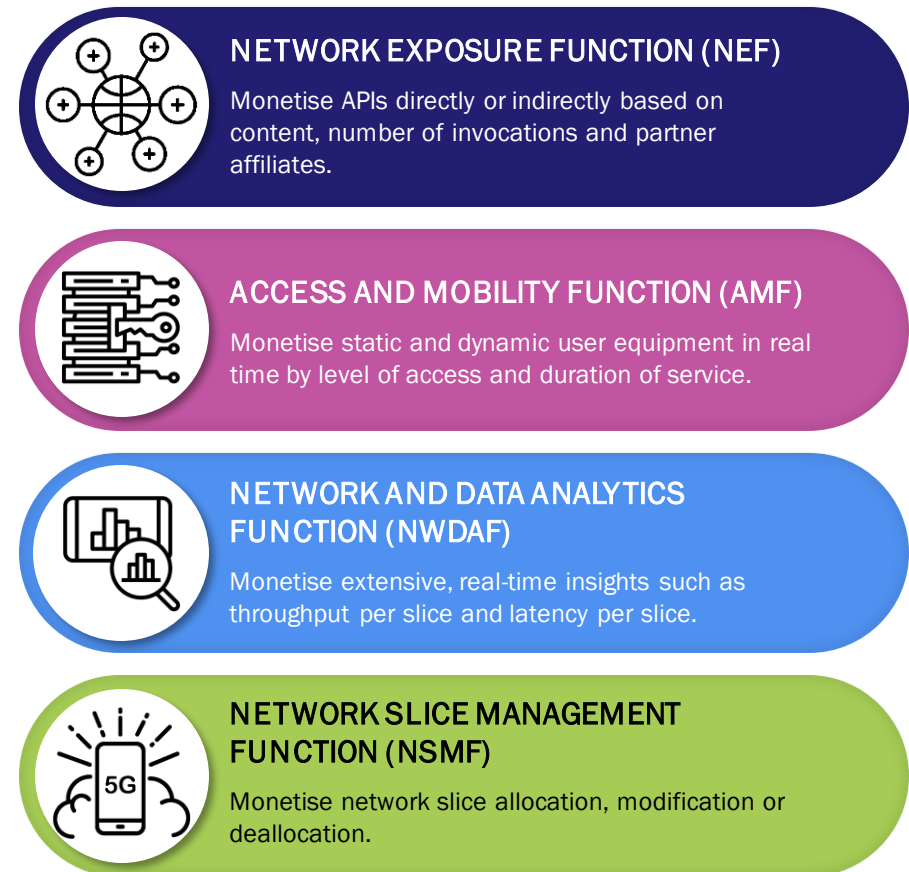
The wider roll-out of 5G standalone remains an important driver of new spending as CSPs invest in upgrading their billing and charging systems

5G-readiness is a key requirement for almost all new investments in monetisation systems, even when the CSP in question does not have any plans to deploy 5G in the near term.

5G-readiness is considered to be an effective way to futureproof monetisation systems, even for CSPs that do not have any immediate plans to roll out 5G standalone (SA). This is because 5G enforces an extensive overhaul of the monetisation process flow, especially when it comes to charging. 5G monetisation no longer depends on call data records (CDRs); instead, it uses APIs. Charging systems that are designed to support CDRs will therefore need to be updated or replaced. This also has implications for other functions such as billing. CSPs will need to take a hybrid approach in the medium term by using online charging systems (OCSs) alongside converged charging systems (CCSs) to manage 3G/4G and 5G traffic, respectively. A small number of CSPs are investing in charging function (CHF) bridging capabilities to support 5G SA in the near term, even as they develop their monetisation systems strategies for the long term.

5G SA allows CSPs to expose and monetise their network capabilities to a much a greater degree than was previously possible (Figure 2 shows some 5G-specific functions). Network slicing and edge computing feature prominently in 5G monetisation discussions, but have not yet resulted in significant investments by CSPs.

Figure 2: Selected 5G-specific capabilities enabled by 3GPP standards that open up new monetisation opportunities



Source: Analysys Mason

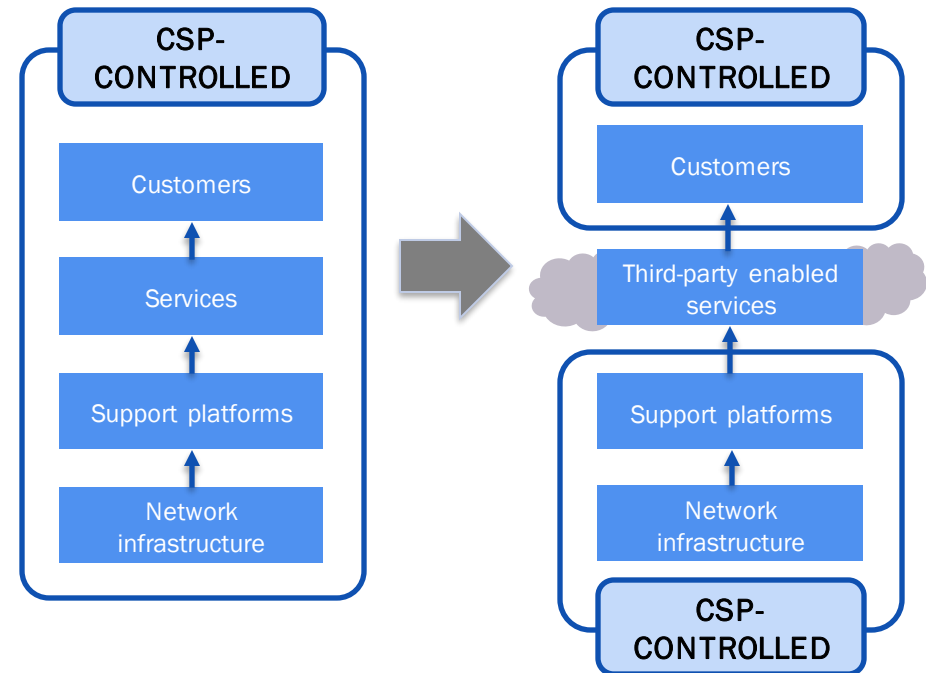
The effective monetisation of B2B2X value chains is driving new investments

Most CSPs are currently unable to effectively monetise their large customer bases and expand into new enterprise opportunities because of system-level limitations that restrict their role as a reseller or enabler of new services.

Ongoing 5G roll-outs are causing CSPs to invest in developing an ecosystem of services around their key offerings for enterprises. CSPs' business and operating models are shifting from a traditional producer-consumer framework to an ecosystem model that is more open and interoperable. Adopting the ecosystem model will be a key part of CSPs' initiatives to expand into the enterprise segment and will require CSPs to work alongside third-party application and service providers (Figure 3). CSPs acknowledge the importance of supporting multi-step, multi-dimensional value chains in future B2B2X business models. However, existing systems are incapable of supporting modern B2B2X requirements in a time- and cost-effective manner.

CSPs favour a SaaS-like pay-as-you-grow approach to investing in ecosystem enablement systems over any approach that requires significant upfront payments. Edge-based applications and network slicing are expected to be part of the emerging enterprise value chain because they give enterprises greater control over their telecoms network assets and allow them to innovate with new business and revenue models.

Figure 3: Evolution of the CSP value chain



Source: Analysys Mason

Key recommendations

1

Vendors should emphasise the agility, configurability and expandability of their solutions.

CSPs are concerned around the transient nature of monetisation platforms, which makes them incapable of supporting emerging use cases and also increases the cost of ownership because of the expansions and customisations required. CSPs need deeper technical insight into vendor platforms in order to build confidence regarding the futureproof nature of their systems.

2

Vendors should provide greater clarity on the huge potential for 5G-ready charging engines in order to effectively monetise emerging applications and services.

5G-ready CCSs are essential for the effective monetisation of 5G SA because incumbent OCSs are unable to support HTTP/2-based interfaces. CCSs also unlock new opportunities for CSPs because 5G allows for the more-flexible exposure of network assets, which can be commercialised in new ways.

3

Vendors should provide a more-detailed roadmap on how CSPs can develop an ecosystem model at low risk and reasonable cost.

Advanced partner management capabilities that enable digital marketplaces are growing in importance as CSPs prepare to use 5G SA to increase their enterprise revenue. However, CSPs still have concerns regarding the long-term viability of such initiatives, and these must be addressed more effectively by vendors.



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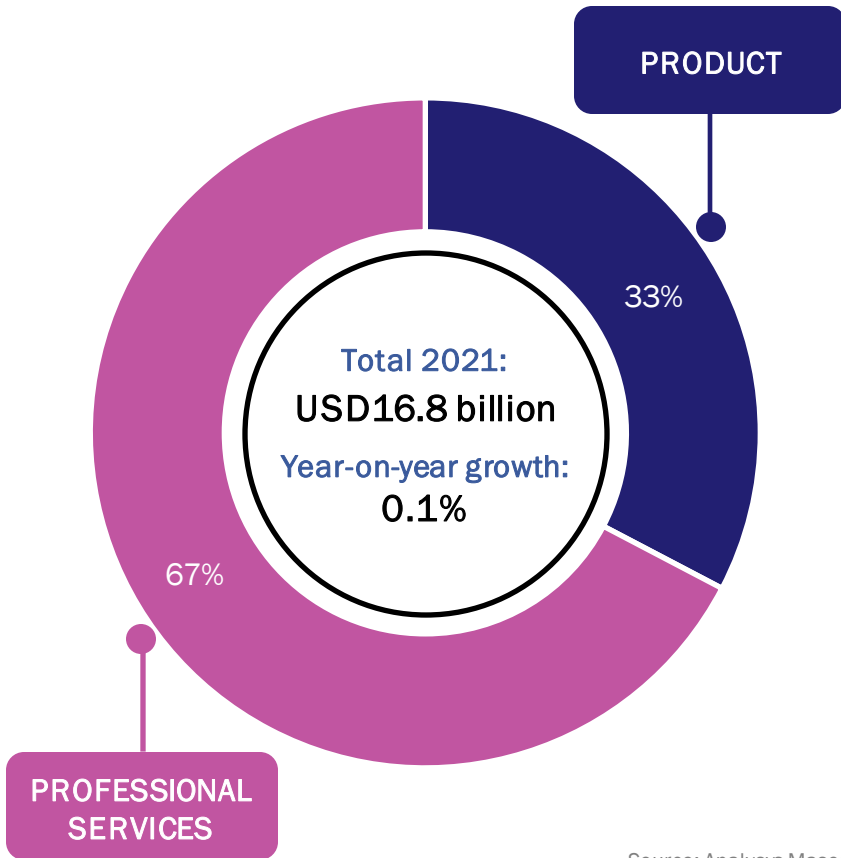
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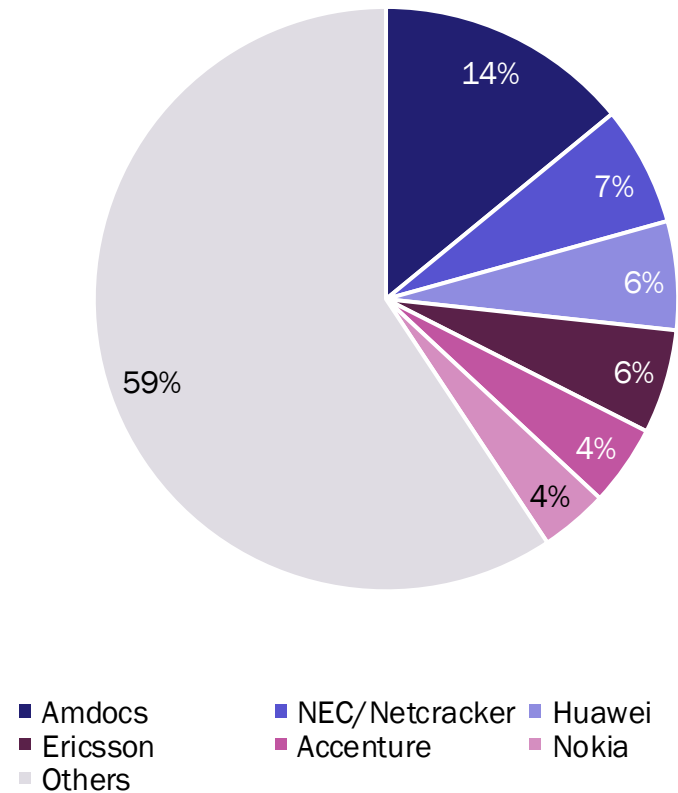
Monetisation platforms revenue market share

Figure 4: Monetisation platforms total revenue by type, worldwide, 2021



Source: Analysys Mason

Figure 5: Monetisation platforms total revenue by vendor, worldwide, 2021¹

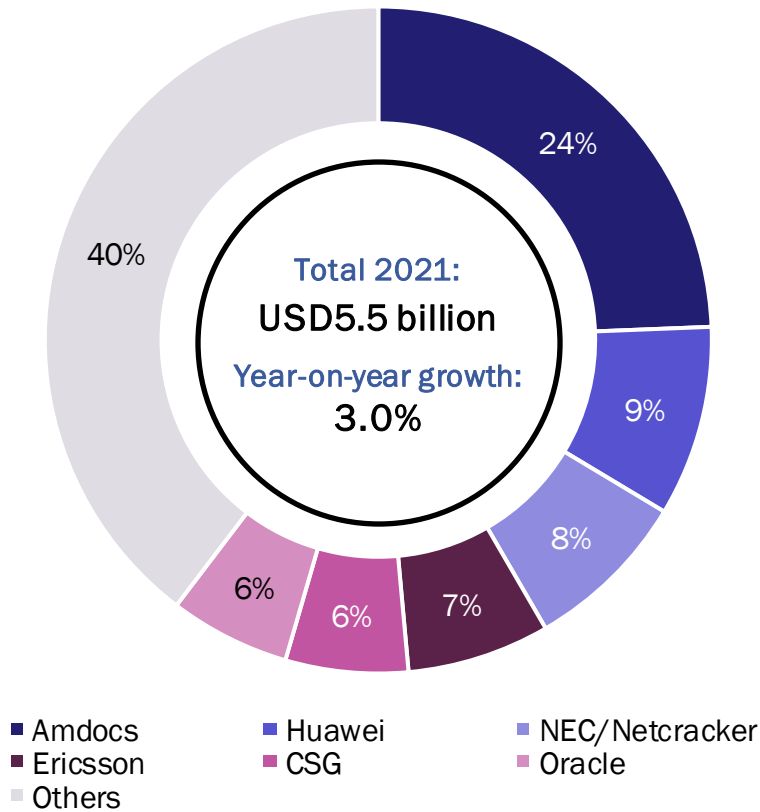


Source: Analysys Mason

¹ Other vendors include Atos, Capgemini, CGI Group, CSG, HCL Technologies, IBM, Infosys Technologies, Oracle, Tata Consultancy Services and Tech Mahindra.

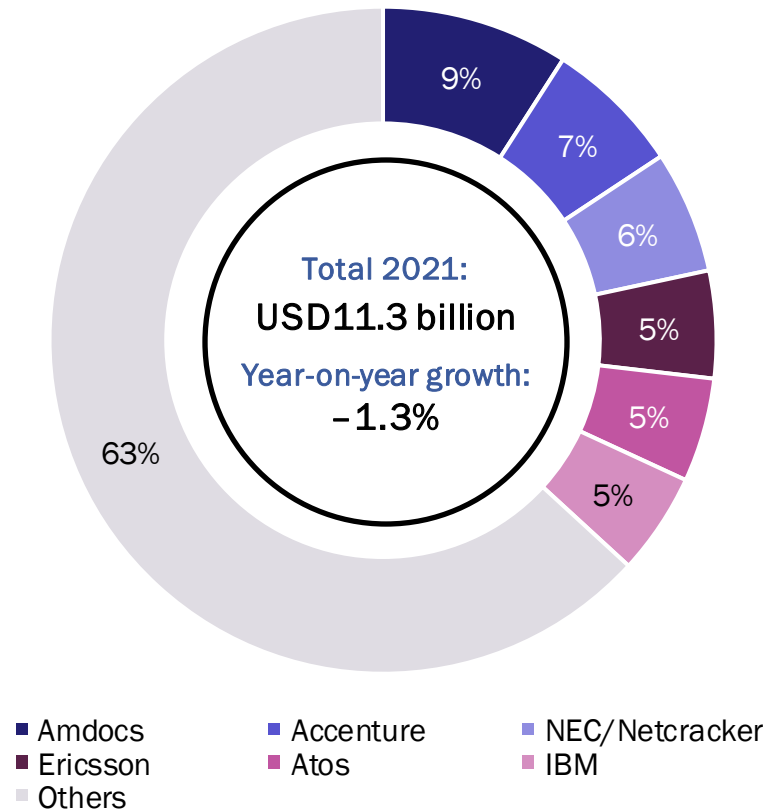
Monetisation platforms revenue market share

Figure 6: Monetisation platforms product revenue by vendor, worldwide, 2021¹



Source: Analysys Mason

Figure 7: Monetisation platforms professional services revenue by vendor, worldwide, 2021¹



Source: Analysys Mason

¹ Other vendors include CGI Group, Cognizant, Comarch, Nokia, Optiva, Sandvine, Tata Consultancy Services and ZTE.



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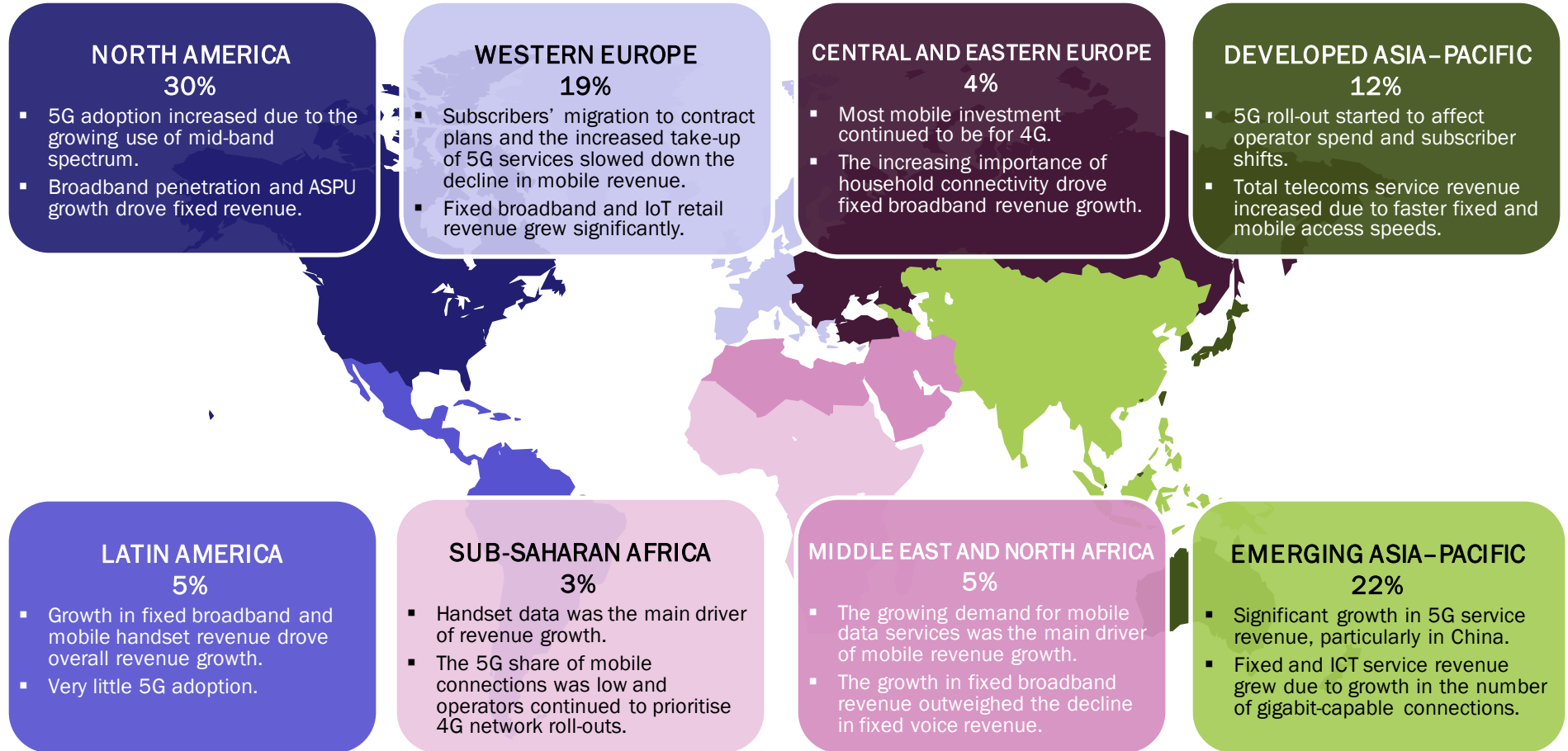
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Overall telecoms services: revenue split and trends for regional markets

Figure 8: Share of worldwide USD1.54 trillion telecoms service revenue and trends by region, 2021



Source: AnalysysMason

Overall telecoms services: regional service breakouts

Figure 9: Metrics for the eight regions modelled individually and worldwide, 2021

	Population (million) ¹	GDP (USD billion) ¹	GDP per capita (USD thousand) ¹	Telecoms revenue				Mobile SIM population penetration ²	Fixed broadband population penetration ³
				Mobile (USD billion)	IoT (USD billion)	Consumer fixed (USD billion)	Business fixed (USD billion)		
North America	372	24 975	67	221	43	99	62	100%	38%
Latin America	663	5 134	8	42	9	18	11	102%	16%
Western Europe	424	19 407	46	124	32	71	38	120%	41%
Central and Eastern Europe	408	4 895	12	39	11	10	8	124%	26%
Developed Asia–Pacific	247	10 180	41	107	15	37	23	107%	38%
Emerging Asia–Pacific	4 140	24 822	6	250	81	51	25	89%	17%
Middle East and North Africa	475	4 755	10	51	4	13	8	100%	10%
Sub-Saharan Africa	1 183	1 947	2	35	3	2	3	80%	1%
Worldwide	7 912	96 114	12	870	199	301	176	94%	17%

Macroeconomic and general regional factors (such as population) provide context for the telecoms revenue figures that we track in the Analysys Mason DataHub. The increasing take-up of FTTP/B and the migration of customers to plans with gigabit speeds in advanced regions drove fixed broadband revenue growth. The Middle East and North Africa and Sub-Saharan Africa lag behind the other regions in terms of fixed broadband penetration due to affordability constraints and limited network footprints. The roll-out of 5G networks and the launch of affordable 5G handsets boosted smartphone sales in Western Europe, North America, developed Asia–Pacific and China.

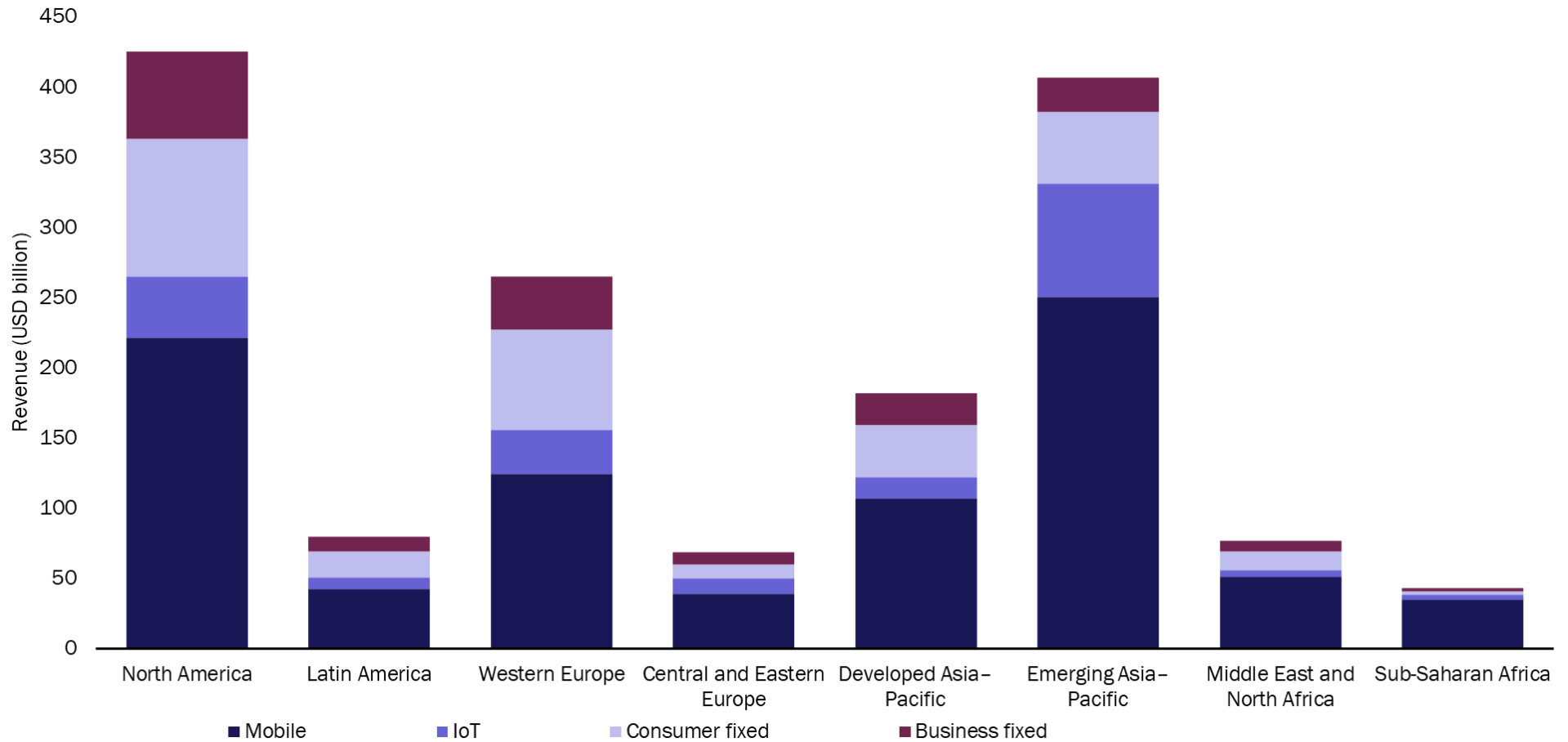
¹ Population data is from the *UN World Population Prospects*. GDP data is from the *IMF World Economic Outlook Database*.

² Excludes IoT SIMs.

³ Total fixed broadband connections (including business) expressed as a share of population.

Overall telecoms services: regional service comparison

Figure 10: Overall telecoms revenue by region and service type, 2021



Source: Analysys Mason

Overall telecoms services: key industry drivers in 2021

Figure 11: Key drivers of the telecoms software and services industry

Driver	Key elements	Discussion
5G	<ul style="list-style-type: none"> Converged core Cloud RAN Infrastructure investments Network slicing Optimising capex/opex 	Investment in 5G is the biggest single factor driving the telecoms software and services industry. Such investments drive software spending for the network itself, for network orchestration and automation, and for improvements to OSS and BSS. CSPs are accelerating launch of 5G standalone, which is leading to an increase in the number of virtualised networks. Cloud RAN/Open RAN is getting more attention from major CSPs.
Cloud	<ul style="list-style-type: none"> Moving current payloads to public cloud Cloud-native development Cloud technology for telecoms networks Platform data services/AI Edge computing 	Cloud computing is disrupting the way in which all industries work, including telecoms. The biggest near-term issue is moving existing payloads to the cloud. However, there is a greater emphasis on using software offered as a service, generally in the public cloud and for new cloud-native development, including of the network itself. Cloud-native network solutions are gaining attention and are driving spending on telecoms software.
Enterprise services	<ul style="list-style-type: none"> Private 5G IoT ecosystems Cloud IT services Enterprise digital experience/self-service SD-WAN 	Private 4G/5G networks have become the most significant area in enterprise services, driving spending for mobile equipment, edge computing and managed services. Enterprises now expect self-service through a digital experience and CSPs are investing to provide this, which in turn creates new requirements for enterprise services. Cloud IT services and IoT are some of the key drivers of spending in this area.
Digital transformation	<ul style="list-style-type: none"> Digital experience Automated customer journeys Cloud-loop automation/lower TCO Use of cloud services/SaaS Culture change (to be like cloud providers) 	The telecoms industry has been pushing digital transformation for some time and is now getting significant pay-off. Nearly all CSPs have deployed and are improving digital customer channels. Increased levels of automation are reducing network operational costs. All this has been made possible by underlying changes to enable the use of cloud methods and more cloud services. Post-pandemic automation spending continues.
Network disaggregation	<ul style="list-style-type: none"> Impact of virtual networks Infrastructure capex changes Infrastructure as real estate Cell densification Private 5G 	Digital transformation has led to network disaggregation. The full vertical integration of networks and services is no longer necessary nor always efficient. Investors such as towercos, fibrecos and hosting centres provide wholesale access to fundamental infrastructure used by many retail service providers. Investment in wholesale infrastructure is growing and is becoming a bigger part of telecoms software opportunities.



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Amdocs: strategy overview

Amdocs is a leading provider of software products and services in the telecoms, media and entertainment industries.

Amdocs has positioned itself as an established player for BSS/OSS, network and media function offerings. It develops, implements and manages proprietary and third-party software and professional services to support the entire customer lifecycle.

Amdocs's offerings are designed to help customers to meet the operational challenges related to rolling out 5G. Amdocs's 5G value plane cloud-native solution includes a 5G-native monetisation suite, along with policy and charging control integrated with Amdocs's Catalog, NWDAF, NEF and end-to-end orchestration functions.

Amdocs recently launched the Amdocs Freestyle Billing solution to offer CSPs an agile approach for monetising 5G. This allows CSPs to minimise complexities for customers and to optimise their billing systems across different services in order to deliver a smooth monetisation experience and to support partner management across B2B2X ecosystems.

Amdocs's Digital Brands Suite is a digital, cloud-native SaaS BSS with pre-built customer journeys for care, commerce, ordering, billing and charging for digital brands, low-tier CSPs and MVNOs. It provides TMF-compliant open APIs and supports single or multi-play for all lines of business (B2C, B2B, wholesale, MVNx, convergent and non-telecoms) and services (5G mobile, fixed, broadband, TV and OTT).

Figure 12: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in Israel in 1982 ▪ Headquartered in Chesterfield, Missouri, USA ▪ 29 000 employees in 30 countries ▪ Operations in over 85 countries
Revenue	<ul style="list-style-type: none"> ▪ Total revenue in 2021: USD4.3 billion (+2.9% year-on-year) ▪ Total revenue by region: 65.1% North America, 14.5% Europe and 20.4% rest of the world ▪ Total revenue by vertical: 59% managed services and 41% other
Key customers	Over 350 communications and media providers including AT&T, Altice, Comcast, Dish, Globe, Lumen, Rogers, Singtel, T-Mobile, Telefónica, TELUS, Verizon and Vodafone
Partnerships	AWS, Camunda, Commbox, Creatio, Google Cloud, KMS Lighthouse, Lightico, MCE and Microsoft
Professional services, products and solutions	Amdocs Bill Experience, Amdocs MarketONE, Amdocs Partner Management, Amdocs Policy, Amdocs Convergent Charging, Amdocs Catalog, Amdocs Real-Time Billing, Amdocs Digital Brands Suite as a Service

Source: Analysys Mason

Amdocs: analysis

Amdocs's monetisation suite enables CSPs to offer flexible billing and monetisation options to support customers' needs and preferences based on different service models.

Amdocs is a leader in the monetisation platforms segment, and monetisation account for well over 50% of its revenue. Its cloud-native monetisation suite includes solutions for charging, billing, policy and revenue management for various industry verticals such as IoT, media, gaming and enterprise.

Amdocs plans to position its monetisation suite as the extensive, all-inclusive option for leading-edge CSPs with large operations, as well as for smaller providers. It will position its Digital Brands Suite as an alternative for Tier-3–5 CSPs and MVNO/Es, especially in emerging markets. Amdocs has extended its billing capabilities to include real-time billing, flexible monetisation models in one universal biller and an interactive bill experience for customers. Users can also transparently monitor various payments in real time.

Amdocs has over 300 CSP customers worldwide. The top 10 customers account for 65% of Amdocs's revenue, which highlights the vendor's role in the Tier-1 CSP segment, especially in developed regions. Several Tier-1 CSPs in North America have integrated Amdocs Freestyle Billing to improve their customer experience and drive operational billing efficiency.

Figure 13: Key strengths and weaknesses

Strength	Description
Global footprint	Amdocs serves over 350 communications, pay-TV, entertainment and media industry service providers across 85 countries. It has a strong base in North America, where it has deployed its portfolio across all major CSPs.
Technological capabilities	Amdocs has evolved its portfolio to be a fully cloud-native, 5G-compliant, open and modular microservices-based platform. It will continue to enhance its product and service offerings with low-/no-code tooling and AI/ML capabilities to support business-led agility.
Broad portfolio of services	Amdocs has a diverse customer base supported by a broad portfolio of product offerings and solid professional services.
Weakness	Description
Low market penetration for SaaS offering	CSPs may view new market entrants that have higher market penetration for their SaaS-based offerings as more transformational.

Source: Analysys Mason

CSG: strategy overview

CSG is a leading provider of revenue management, payment and customer engagement solutions to CSPs worldwide.

CSG provides revenue management and digital monetisation solutions that are built on open APIs, distributed architecture and microservices technology. The company operates on a cloud-first, DevOps-ready strategy and is building on its expertise in the monetisation of complex services and business models as part of its growth initiatives.

CSG's flagship, cloud-native Encompass platform powers the entire concept-to-cash lifecycle for multi-sided business models such as B2B2X. CSG Encompass enables service providers to innovate with a diverse range of partners. Its core capabilities include onboarding, offer creation, charging and settlements.

CSG Ascendon is a cloud-based monetisation and engagement platform for launching new digital services across multiple business lines. It is fully cloud-native and delivered as SaaS. It can be deployed on any public cloud including AWS, and provides OCS, usage processing and rating capabilities.

CSG invested in enhancing its digital monetisation portfolio via new acquisitions in 2021. It acquired Tango Telecom and DGIT Systems to enhance its portfolio in the areas of policy control, configure price quote (CPQ), order management and product catalogue.

Figure 14: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 1982 ▪ Headquartered in Colorado, USA, with offices worldwide ▪ Over 4800 employees
Financial performance	<ul style="list-style-type: none"> ▪ Revenue in FY2021: USD1.046 billion ▪ Publicly traded
Products and services	<ul style="list-style-type: none"> ▪ CSG Encompass supports complex monetisation models including B2B2X. It offers comprehensive capabilities including partner management, catalogue-driven CPQ and order management, policy control, charging, billing and settlements as a single open, integrated platform. ▪ CSG Ascendon is a cloud-based monetisation and engagement platform for digital marketplaces and services. ▪ Advanced Convergent Platform (ACP) is an integrated billing and customer care platform for cable and satellite providers. ▪ Other products: Singleview, CPQ & Order Management, Policy Control, Digital Wholesale and Digital Mediation
Key customers	AT&T, Airtel Africa, Charter, Comcast, DISH, Formula One, Mastercard, MTN, TalkTalk and Telstra
Partnerships	AWS, Kiosk and Microsoft

Source: Analysys Mason

CSG: analysis

CSG will add new capabilities to its monetisation platform following its recent acquisitions of DGIT Systems and Tango Telecom. This will enable CSPs to launch new digital services in the B2C, B2B and B2B2X markets.

CSG is a well-known provider of BSS solutions and has deployments across multiple Tier-1 CSPs worldwide. A substantial percentage of its total revenue is generated from its core SaaS-based Advanced Convergent Platform.

The company is well-positioned to address the growing digital services segment by providing flexible, cost-optimised solutions via CSG Ascendon, which enable CSPs to experiment with next-generation business models. The recently announced CSG Encompass builds on the company's strengths in complex monetisation, with open, integrated, modular architecture to manage multi-faceted digital ecosystems from concept to cash.

CSG's recent acquisition of Tango Telecom will allow the vendor to deliver an end-to-end solution for converged voice and data services across 5G networks. It will also enable customers to effectively manage voice and data transactions. CSG and DGIT Systems will combine their solutions to provide a TM Forum Conformance Certified, modern, open and decoupled architecture that provides the flexibility for CSPs to innovate and implement new digital services.

Figure 15: Key strengths and weaknesses

Strength	Description
Broad customer base	CSG has a well-established client base. It serves over 300 companies and offers BSS solutions to multiple Tier-1 and Tier-2 CSPs.
Portfolio investment	CSG is expanding its monetisation portfolio through partnerships and acquisitions. It has also made investments in its existing portfolio, including TM Forum Open APIs. This will allow it to benefit from opportunities in full-stack BSS and digital transformations.
Weakness	Description
Competition	Well-entrenched competitors with broad portfolios are likely to be favoured by CSPs.
Perception	Some CSPs regard CSG as a vendor who is more active in the Tier-1 cable market with limited exposure to emerging monetisation applications.

Source: Analysys Mason

Ericsson: strategy overview

Ericsson is a major equipment, software and services company that serves multiple industry verticals, including the telecoms sector.

Ericsson is a leading digital BSS software provider in the telecoms industry. It is a well-regarded vendor in the monetisation platforms segment thanks to its history of providing products for networks and real-time charging. Ericsson has undergone a strategic shift in its digital BSS portfolio to increase its focus on cloud-native and automation solutions in order to support 5G consumer and enterprise business.

Ericsson's Digital BSS portfolio provides customer-centric business operations and digital engagement to enable CSPs to monetise an improved customer experience. It offers charging, billing, catalogue management, mediation and order care solutions. It also includes the Ericsson Digital Monetisation Platform, which provides a product catalogue-enabled, convergent charging and billing solution.

Ericsson generates its largest share of revenue from its Networks segment. Well over 100 5G live networks are powered by Ericsson and its flexible Digital BSS CHF module provides monetisation capabilities based on 3GPP's service-based interface. Ericsson continues to invest in building its cloud-native architecture for 5G-enabled BSS solutions, as well as maintaining its strong focus on the enterprise/B2B segment.

Figure 16: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 1876 ▪ Headquartered in Sweden, with offices worldwide ▪ Approximately 101 322 employees ▪ Customers in more than 180 countries
Financial performance	<ul style="list-style-type: none"> ▪ Publicly traded ▪ Revenue in 2021: SEK232.3 billion (USD25.7 billion)
Products and services	<ul style="list-style-type: none"> ▪ Ericsson Charging is a modular, scalable, open, single convergent online charging system that uses industry standards and protocols. ▪ Ericsson Billing is a convergent, end-to-end billing system for CSPs. ▪ Ericsson Catalog Manager is a catalogue management system for BSS and OSS. ▪ Ericsson Order Care is an order management system for handling workflows across services. ▪ Ericsson Mediation provides data mediation for all networks and IT systems and bridges network elements with BSS and OSS.
Key customers	Airtel/Bharti, AT&T, China Mobile, Etisalat, MTN, Orange, Telefónica, Telstra and T-Mobile
Key partnerships	Accenture, Cisco, Intel, Tech Mahindra and Wipro

Source: Analysys Mason

Ericsson: analysis

Ericsson is a leading vendor in the monetisation platforms segment due to its history of providing products for networks and real-time charging.

Ericsson has a strong brand, worldwide channel coverage and a well-regarded managed services business, which continues to grow. The company has used its extensive BSS, OSS and networks portfolios to build strong relationships with CSPs in all tiers. Ericsson's broad portfolio also gives it many opportunities to upsell and cross-sell its solutions to its established large CSP customers in order to develop deeper relationships with them.

Ericsson covers five regional markets (North America; Europe and Latin America; Northeast Asia; Southeast Asia, Oceania and India; and the Middle East and Africa). Western Europe accounts for most of Ericsson's monetisation platforms revenue. Ericsson will continue to focus on revenue growth in emerging markets as sales in mature markets slow down.

Ericsson is making good progress in developing its narrative around 5G charging. This is a key area of investment, especially for the monetisation segment. Its managed services will provide many opportunities to support multi-vendor solutions and the integration of more third-party applications.

Figure 17: Key strengths and weaknesses

Strength	Description
Global presence	Ericsson has a wide geographical presence. Its worldwide presence and channels to market enable it to develop close relationships with CSPs worldwide.
Industry expertise	Ericsson is using its deep telecoms expertise to support CSPs in defining and monetising their 5G use cases.
Wide product offerings	Ericsson has a strong brand with an extensive portfolio of offerings across BSS/OSS and networks.
Weakness	Description
Perception	Ericsson is continuing to rebuild and expand its Digital BSS portfolio. Some concerns remain around its greater emphasis on network services.
Dependence on partners for end-to-end offerings	Ericsson relies on partners to provide a full-stack BSS, which may be a concern for some CSPs that are investing in end-to-end transformations.

Source: Analysys Mason

Huawei: strategy overview

Huawei is a technology provider that supplies the telecoms and enterprise sectors with offerings in consumer devices, network infrastructure, software solutions and professional services.

Huawei is a technology company that sells telecoms equipment, software, professional services and consumer electronics in over 170 countries. It has a broad telecoms software portfolio that includes convergent charging, billing, policy and partner management solutions. The company’s customer base has expanded rapidly worldwide over the past few years.

Huawei increased its R&D investment to CNY142.7 billion (USD 21.2 billion) in 2021. This is equivalent to 22.4% of its total revenue and is the highest level of investment made in the past 10 years. It is heavily investing in 5G and is working with multiple operators worldwide on large-scale 5G deployments. To date, Huawei has advanced over 3000 industrial 5G applications and has worked with carriers in over 100 countries.

Huawei launched CBS R21, a convergent billing system that supports a 5G monetisation mode, in 2021. CBS R21 is built on cloud-native architecture with full-container, distributed applications and data. It provides a complete set of DevOps tools and integration with third-party tools to achieve end-to-end automation and full service agility. It currently serves 2.3 billion subscribers and more than 200 CSP customers around the world.

Figure 18: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 1987 ▪ Headquartered in Shenzhen, China with offices worldwide ▪ Over 195 000 employees
Financial performance	<ul style="list-style-type: none"> ▪ Revenue in 2021: CNY636.8 billion (USD94.4) (-28% year-on-year) ▪ Total revenue by region: 64.9% China, 20.6% Europe, the Middle East and Africa, 8.4% Asia-Pacific, 4.6% Americas, 1.5% rest of the world ▪ Total revenue by vertical: 44.2% carrier business, 38.2% consumer business, 16.1% enterprise business, 1.5% others
Products and services	<ul style="list-style-type: none"> ▪ Huawei’s CBS R21 is a 5G monetisation solution that supports multiple 5G use cases. ▪ Huawei Business Enabling System (BES) is a next-generation portfolio of customer-facing telecoms software systems that support CSPs’ digital transformations. ▪ Huawei is also investing in developing cloud-based BSS stacks for enterprise-focused use cases.
Key customers	BT, China Mobile, Vodafone Turkey and Umniah Jordan
Key partnerships	Accenture, China Unicom, Kuwait Telecom and SAP

Source: Analysys Mason

Huawei: analysis

Huawei is increasing its focus on digital transformation by concentrating on cloud-based deployments and 5G monetisation.

Huawei helps CSPs to monetise their networks by supporting the evolution of innovative 5G services from technical verification to commercial application. It provides a multi-dimensional monetisation solution that enables differentiated experiences on demand.

Huawei is expanding its roadmap with more B2B capabilities for upcoming 5G use cases. It is shifting away from customising its solutions and is instead focusing on providing standardised off-the-shelf solutions delivered over the cloud. Indeed, its early monetisation platform implementations were heavily customised, but recent deployments have placed a greater emphasis on standardisation to keep costs down. In addition, Huawei has embraced the public cloud and open-source ecosystems by launching on AWS.

Huawei has been making progress in deploying a cloud-native version of its platform and adding DevOps automation capabilities to speed up delivery in regions such as Europe, the Middle East and Asia-Pacific. The increased adoption of 5G has benefitted Huawei, and the company continues to use its experience from China to add capabilities into its base products.

Figure 19: Key strengths and weaknesses

Strength	Description
Large customer base	Huawei has a strong telecoms customer base, which provides it with deep channel access across all CSP types worldwide.
Technical capability	Huawei has strong in-house technical capabilities and continues to invest in technology innovation. It has made recent advances in cloud-native architecture.
5G billing and charging	Huawei's CBS solution is well-regarded in supporting specific 5G use cases with large bandwidth and low latency.
Weakness	Description
Geopolitical issues	Current geopolitical factors have limited Huawei's reach and ability to work with certain customers and partners.
Limited customer types	Huawei is closely tied to the carrier business and has limited exposure to emerging trends in non-telecoms verticals.

Source: Analysys Mason

MATRIXX Software: strategy overview

MATRIXX Software provides digital BSS technology to CSPs worldwide.

MATRIXX Software's Digital Commerce Platform (DCP) is an alternative to legacy BSS solutions and is offered to CSPs worldwide. MATRIXX Software is based in Silicon Valley and was founded in 2009 by ex-Portal/Oracle executives. It is primarily focused on the effective monetisation of digital and 5G services. MATRIXX Software is well-regarded in the industry and formed a partnership with Vlocity (now owned by Salesforce) to develop an all-digital suite solution called Go-Digital. The company also works closely with multiple SI partners to deliver its solutions worldwide.

MATRIXX Software's solution is increasingly deployed separately from existing legacy infrastructure in order to create a new digital BSS stack using a fast-track approach. This approach allows CSPs to rapidly deliver a digital experience, simplify operations, reduce opex and embrace agile development with configuration-based software.

The vendor has a strong emphasis on deploying 5G-based technologies in its DCP. MATRIXX Software's 5G vision is to deliver a single commerce platform that can cater for all network types and all customer segments. Its 5G core service-based architecture gives CSPs the flexibility to choose their network migration strategy as they evolve from 4G to 5G by using cloud-native, open-source principles.

Figure 20: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 2009 ▪ Headquartered in Saratoga, USA with offices in Australia, Malaysia, New Zealand, Singapore, the UAE and the UK ▪ Over 250 employees
Revenue	<ul style="list-style-type: none"> ▪ Privately held ▪ Revenue not disclosed
Key customers	<ul style="list-style-type: none"> ▪ MATRIXX Software's DCP is a single cloud-native platform for creating, selling, delivering and monetising digital services. ▪ MATRIXX Software's DCP includes a network-grade converged charging system (OCS/CCS) that enables the efficient hyperscaling of infrastructure to support consumer services, wholesale and enterprise marketplaces in hybrid network environments. ▪ The platform can be used to monetise services such as subscription management, revenue reporting, technical product catalogue and event streaming.
Partnerships	Cox, Dish, Orange, Three, Telefónica, Verizon and Vodafone
Professional services, products and solutions	Accenture, AWS, Cisco, Google Cloud, HPE, IBM, Salesforce, Tech Mahindra and Wipro

Source: Analysys Mason

MATRIX Software: analysis

MATRIX Software is primarily focused on expanding its capabilities and presence around 5G charging, and is well-recognised for its capabilities in this area.

MATRIX Software provides next-generation, cloud-native digital commerce solutions to customers in North America, Europe, the Middle East, Latin America and Asia-Pacific and is aiming to forge relationships in new markets. MATRIX Software has received financial investments from four Tier-1 CSPs and leading venture capital firms, such as Swisscom and Telstra, which has given it traction in the market.

MATRIX Software has credible deployments of its charging platform at multiple Tier-1 CSPs. It also has a range of technology partnerships with SIs and vendors. It is working to operate in a multi-vendor ecosystem and will therefore aim to marry its software with other industry-leading technology. MATRIX Software is developing technology and delivery partnerships to improve its channel coverage and widen its reach. It has a close working partnership with Vlocity (acquired by Salesforce in February 2020), with whom it has delivered solutions and covered multiple customer sites.

MATRIX Software's product portfolio primarily focuses on real-time monetisation. The core is a 3GPP CCS. Larger vendors with broader portfolios of offerings, such as network equipment providers, may offer better pricing for end-to-end transformation deals that include charging components.

Figure 21: Key strengths and weaknesses

Strength	Description
Cloud-native architecture	MATRIX Software's solutions are cloud-native-compliant, which has become a key requirement for new deployments.
5G charging	The company has a growing reputation as a provider of charging solutions and is well-positioned to embrace the emerging opportunity around 5G charging.
High-profile backers	Leading venture capital funds and Tier-1 CSPs such as Orange, Swisscom, Telstra and Three have invested in MATRIX Software.
Weakness	Description
Limited portfolio coverage	MATRIX Software is focused on modern commerce practices, so its offerings lack some monetisation functionality. This might be a concern for operators that are looking for an end-to-end BSS stack.
Limited channel presence	MATRIX Software has a limited channel presence outside of its core regions of operation.
Dependence on key partners	MATRIX Software is growing its channel relationships by partnering with third-party firms, but it is still reliant on technology and delivery partners to sell and deliver solutions to CSPs.

Source: Analysys Mason

Mavenir: strategy overview

Mavenir is a leading provider of end-to-end, cloud-native network software solutions.

Mavenir is an end-to-end network solutions provider with a global footprint for various networking product segments, including IP multimedia subsystems (IMS) core, converged packet core, RAN and AI and analytics.

The Mavenir Engage Business Messaging as a Service solution is a cloud-based customer engagement platform that offers customer care, business messaging, monetisation and self-service on-boarding solutions. It is part of the MAVbiz portfolio of business communications solutions that aims to help CSPs to modernise conversational experiences with chatbots, shortcuts and automation capabilities. The MAVbiz portfolio also includes Mavenir Connect, Mavenir Care and Mavenir Communications Platform as a Service (CPaaS).

Mavenir has continued to expand its telecoms BSS capabilities with the launch of its cloud-native Mavenir Digital Enablement (MDE) platform. The MDE platform provides omni-channel engagement capabilities that enable CSPs to offer a personalised digital experience to customers in the B2C, B2B and B2B2X markets.

Figure 22: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 2005 as Mavenir Systems ▪ Headquartered in Richardson, Texas, USA ▪ 5000 employees worldwide (2021 data), 60% of which are in research and development
Revenue	Revenue in FY2021: USD636 million (+20.1% year-on-year)
Key customers	Over 250 CSP customers from 120 countries including AT&T, BT, DISH Network, Deutsche Telekom, NTT DOCOMO, O2, Rakuten, Sprint, Telefónica, T-Mobile, Turkcell, Verizon and Vodafone
Partnerships	5G Alliance for Connected Industries and Automation (5G-ACIA), GSMA, Next G Alliance, OnGo Alliance, O-RAN Alliance, Open Network Automation Platform (ONAP), Open RAN Policy Coalition and Telecom Infra Project (TIP)
Professional services, products and solutions	<ul style="list-style-type: none"> ▪ Mavenir Care is a contact centre-as-a-service (CCaaS) solution ▪ Mavenir Connect is a unified communications and collaboration-as-a-service (UCaaS) solution ▪ Mavenir Digital Enablement (MDE) platform is a BSS with customer engagement, monetisation and marketplace capabilities ▪ Mavenir Engage is Mavenir’s cloud-based customer engagement platform ▪ Mavenir Communications Platform as a Service (CPaaS) enables CSPs, SIs and channel partners to offer enterprise-grade communication services

Source: Analysys Mason

Mavenir: analysis

Mavenir Engage is a SaaS-based customer engagement platform that helps CSPs to deliver an omni-channel customer experience and create new revenue opportunities.

Mavenir focuses on providing cloud-native solutions to CSPs, MNOs and enterprises to reduce operating costs, improve network efficiency and generate new revenue streams.

Mavenir was founded from a series of mergers and acquisitions of software and networking firms. It uses expertise in customer engagement from Acision, which specialised in mobile messaging and engagement services. Mavenir acquired Telestax in August 2021 to expand the Mavenir Engage platform with omni-channel messaging and 5G monetisation capabilities.

Mavenir Engage uses the Mavenir Business Messaging Ecosystem, which brings together over 70 partners including messaging aggregators, application developers, channel partners, chatbot providers and CPaaS vendors. This allows CSPs to support new business models that are pre-integrated with third-party partner solutions.

Figure 23: Key strengths and weaknesses

Strength	Description
Strong R&D capabilities	Mavenir benefits from R&D capabilities, further strengthened by its acquisitions of companies such as Xura and Brocade.
Multi-vendor ecosystem	Mavenir has a strong partner ecosystem, which enables CSPs to deploy multi-vendor solutions.
Expert in virtualised solutions	Mavenir is a specialist in virtualised solutions, which has led it to become one of world's leaders in NFV solutions.
Weakness	Description
Limited visibility	Mavenir primarily focuses on network software offerings and has limited exposure in the customer engagement segment.
Competition with market incumbents	The segment is dominated by competitors with well-regarded customer engagement portfolios.

Source: Analysys Mason

NEC/Netcracker: strategy overview

Netcracker is an NEC subsidiary and a leading provider of software solutions and professional services. It specialises in monetisation platforms and network management.

NEC/Netcracker's Digital BSS/OSS portfolio is a modular, cloud-native solution that enables CSPs to modernise their business and operations environments. It includes the NEC/Netcracker Digital BSS solution, which helps CSPs to rapidly launch and monetise 5G, IoT and cloud services, expand partner ecosystems and access new revenue streams. Medium-sized and large CSPs that use NEC/Netcracker's primary product portfolio of BSS and OSS products account for the majority of the vendor's revenue.

The NEC/Netcracker 5G Monetization solution provides new, diverse revenue opportunities such as charging for any service, partner or business model in real time, including network slice-as-a-service and SLA-based charging to B2B customers. It offers a 3GPP-compliant CCS and an OCS to support complex 4G/5G switchover charging scenarios and hybrid services for the same account. It provides a broad range of business models to monetise partner ecosystems and helps CSPs to become B2B2X enablers.

NEC/Netcracker Cloud BSS can be delivered as SaaS and has been packaged into solutions for marketing and commerce, sales and customer services and revenue management.

Figure 24: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 1993 ▪ Acquired by the NEC corporation in 2008 ▪ Headquartered in Waltham, MA, USA ▪ Over 250 customers worldwide
Revenue	NEC reported a total revenue of JPY3014.1 billion (USD21.9 billion) in FY2021 (ending 31 March 2022).
Key customers	BT, Cox, du, Liberty Global, NTT, O2 UK, Rakuten, Singtel, stc, Telefónica, Telenet, TMNL, T-Mobile, Telesat, Verizon, VMO2, Vodafone, Vodafone Oman and Zain Saudi Arabia
Partnerships	AWS, Google Cloud Platform, Microsoft, Red Hat and VMware
Professional services, products and solutions	<ul style="list-style-type: none"> ▪ NEC/Netcracker 5G Monetization helps CSPs to create diverse revenue opportunities for B2C, B2B and B2B2X scenarios. ▪ NEC/Netcracker Digital Platform delivers digital immersive experiences, 5G and IoT business models and intelligent automation. ▪ NEC/Netcracker Digital BSS provides a holistic view on customer experience and AI-driven proactive care for improving customer experience. ▪ NEC/Netcracker Cloud Platform enables platform management capabilities for deploying and scaling cloud-native architecture. ▪ NEC/Netcracker Cloud BSS

Source: Analysys Mason

NEC/Netcracker: analysis

NEC/Netcracker has a strong focus on monetisation and is developing standardised, modular BSS platforms that enable the efficient monetisation of the 5G ecosystem.

5G monetisation is a key focus of NEC/Netcracker's overall strategy, and the vendor has made significant investments in this area. The company is developing open, standardised technology and is implementing TM Forum Open APIs in its monetisation solution. Its 5G Monetization solution is built on cloud-native applications and is managed using Agile DevOps. It provides native support for multi-cloud operations and is deployable in edge, telecoms, private and public clouds (Google Cloud, AWS and Microsoft Azure).

NEC/Netcracker launched the NEC/Netcracker Digital Platform in February 2022. This extends the vendor's OSS and BSS functionalities with advanced security and cloud features, immersive digital engagement and advanced monetisation features. The new platform, as well as its individual modules, are available via SaaS on all major hyperscalers' platforms.

NEC/Netcracker has extensive managed services expertise and a good delivery record for large-scale transformations across CSPs of all tiers. It primarily cross-sells BSS solutions to its installed base of customers but plans to pursue upsell opportunities with existing customers, while also using NEC's footprint to expand its customer base.

Figure 25: Key strengths and weaknesses

Strength	Description
Portfolio coverage and expertise	NEC/Netcracker is recognised for its broad BSS portfolio that has been deployed worldwide across CSPs of all sizes.
Focus on key themes	The company has positioned its solution around the key themes of customer engagement and 5G monetisation.
Multi-cloud support	NEC/Netcracker supports the deployment of its cloud BSS solutions across multiple types of public cloud infrastructure.
Weakness	Description
Not known as a SaaS provider	The company is perceived as being a provider of traditional BSS; it has limited experience in providing pure SaaS solutions.
Emphasis on professional services	NEC/Netcracker has a fully fledged professional services division that is capable of supporting large and complex transformations. This may limit its appetite for smaller cloud BSS opportunities.

Source: Analysys Mason

Nokia: strategy overview

Nokia is a global provider of mobile telecoms equipment, software solutions and professional services. Its primary customers are telecoms operators.

Nokia's portfolio of offerings includes fixed and mobile broadband and IP/optical networking, software solutions (OSS, BSS, service delivery platform, cloud, analytics, security and IoT), professional services and consumer technology products for CSPs, governments, large enterprises and consumers.

Nokia's monetisation portfolio was previously part of the Nokia Software segment. However, Nokia adopted a new operating model in 2021 and the monetisation portfolio is now part of the Cloud and Network Services business group, which includes Core Networks, Business Applications, Enterprise Solutions and Cloud and Cognitive Services. Nokia's monetisation offerings include Nokia Converged Charging, Nokia Recommendation Manager, Nokia Mediation and Nokia Policy Controller.

Nokia has worked to expand its monetisation portfolio from traditional charging to 5G-ready converged charging for all types of CSPs. It launched its Charging Configurator software in September 2021 to enhance the Nokia Converged Charging solution. The Charging Configurator software enables CSPs to create new pricing and market offers themselves using a no-code configuration environment. It also enables a faster time to market and real-time 5G monetisation.

Figure 26: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 1865 ▪ Headquartered in Espoo, Finland with offices in 130 countries ▪ Over 87 000 employees (2021)
Financial performance	<ul style="list-style-type: none"> ▪ Publicly traded ▪ Revenue in 2021: EUR22.2 billion (USD22.7 billion) (+1.6% year-on-year)
Products and services	<ul style="list-style-type: none"> ▪ Nokia Converged Charging provides real-time rating and charging to enable new 5G monetisation use cases using a no-code configuration. It simplifies new offer creation and accelerates the time to market. ▪ Nokia Policy Controller is a combined network function that fulfils 5G policy rules and interoperability with 4G with independently scalable sub-functions. ▪ Nokia's Recommendation Manager is designed for CSP marketing and customer value management (CVM) teams to define and automate contextual customer engagements. ▪ Nokia Mediation collects, unifies and refines siloed data into valuable inputs for any business application in real time. The solution connects the network and other data sources to the OSS/BSS.
Key customers	BT, Cellcard, China Unicom, KDDI, Liberty Global, Ooredoo Qatar, Rock Connect, Sunrise UPC, Taiwan Star Telecom, TELUS, Togocom and Vodafone
Key partnerships	AWS, Google Cloud, Salesforce and Qvantel

Source: Analysys Mason

Nokia: analysis

Nokia has been investing to add more intelligent automation to its monetisation platform. It is continuing to drive the adoption of multi-cloud and 5G solutions.

Nokia continues to focus on embracing cloud-native architecture as a central part of its software strategy and has made considerable investments to make its portfolio fully cloud-native-compliant. The company's monetisation solutions have been built from the ground up to be cloud-native-compliant and 5G-ready, and are available from major public cloud providers such as AWS.

Nokia is firmly invested in the Nokia Converged Charging portfolio and its ongoing evolution as part of its strategy to help CSPs to unlock value from their 5G investments. It also is well-known in the mediation platforms sub-segment among leading CSPs. Nokia is extending its monetisation solution through partnerships (such as those with Salesforce and Qvantel) that provide synergies with existing technical and functional capabilities.

Nokia has a strong services division, but it increasingly works with SI partners to complement its offerings and gain access to new markets. Nokia has a large customer base, and it will continue to target Tier-1 and Tier-2 CSPs. Its large customer base and CSPs' emerging 5G charging needs provide opportunities to upsell and cross-sell its BSS solutions.

Figure 27: Key strengths and weaknesses

Strength	Description
Large customer base	Nokia has a large customer base, which provides it with deep channel access across all CSP types worldwide.
Cloud-native architecture	Nokia is well-regarded for its progress in the adoption of cloud-native frameworks within its BSS solutions.
Expertise in 5G	The company has adopted 5G-compliant frameworks and is embracing the emerging opportunity around 5G charging.
Weakness	Description
Limited exposure to enterprises	Nokia's monetisation portfolio has limited exposure to enterprises, from where much of the drive and narrative for cloud-native computing comes. The company expects to improve this through its new organisational structure.
Dependence on key partners	Nokia does not have a billing system or partner management system in its portfolio and has chosen to rely on third-party vendor partners.

Source: Analysys Mason

Optiva: strategy overview

Optiva provides cloud-native monetisation and BSS products that can be delivered over both the private and public cloud.

Optiva's current portfolio of offerings includes multiple monetisation solutions that target different customer types. Its cloud-native Charging Engine is focused on Tier-1 and leading Tier-2 CSPs, while its end-to-end BSS platform specifically focuses on Tier-2 to Tier-4 CSPs, MVNOs and MVNAs. The Optiva BSS Platform has been rearchitected and made available on the cloud and is Optiva's new entry into the SaaS market.

Optiva is focusing on research and development plans to enable innovative 5G use cases and new monetisation schemes evolving around B2B2X, IoT and partner management. It is investing heavily in upgrading its offerings to become fully cloud-native and is delivering its products and services via a SaaS or subscription-based business model.

Optiva is positioning itself as an enabler of value-based transformations and is prioritising a swift time to market and low total cost of ownership (TCO). It has won new deals over the past year with Tier-1/2 CSPs and MVNOs (including Mtel Banja Luka and Omantel) to provide its Optiva Charging Engine on its new cloud-native platform. It has also launched its new MVNx Fast Track programme to accelerate roll-outs for MVNO/Es.

Figure 28: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 1999 ▪ Headquartered in Toronto, Canada ▪ 374 employees as of December 2021
Financial performance	<ul style="list-style-type: none"> ▪ Publicly traded ▪ Revenue in 2021: USD65.2 million (-14.1% year-on-year)
Products and services	<ul style="list-style-type: none"> ▪ Optiva's BSS Platform is an end-to-end monetisation platform that includes online charging and billing, integrated customer management, product catalogue, order management, multi-channel customer care and dealer and wholesale management. ▪ Optiva Charging Engine is a real-time CCS for telecoms connectivity, including 5G, as well as OTT and partner-driven services. ▪ Optiva's Policy Management solution is tightly integrated with its charging engine to enable multiple 5G and IoT use cases.
Key customers	Digitel, KDDI, Omantel, TELUS, Vodacom Tanzania and Vodafone
Key partnerships	Google Cloud Platform

Source: Analysys Mason

Optiva: analysis

Optiva will continue to invest in its cloud-native portfolio to expand its capabilities and market presence and to provide its customers with innovative monetisation opportunities.

Optiva's revenue comes primarily from the sale of software licences and subscriptions, professional and managed services, and customer support contracts. Optiva expects that the revenue generated from its legacy system offerings will eventually decline to zero, but will be offset by new revenue from its cloud product offerings.

Optiva has positioned itself for opportunities with CSPs that are embracing cloud architecture models and, as a result, has announced new deals over the past year with Tier-1 and Tier-2 CSPs for solutions deployed on the private and public cloud. The company has also developed a close working partnership with Google Cloud Platform (GCP). Optiva is gaining credibility and visibility through this partnership. However, it still has a relatively undeveloped partner ecosystem compared to its rivals in the market, which may limit its ability to strengthen its portfolio.

Optiva recently secured a USD20 million R&D investment, which will allow it to open new excellence centres and develop new capabilities for 5G.

Figure 29: Key strengths and weaknesses

Strength	Description
Customer base	Optiva has many customers across all types of CSPs.
Cloud-native deployments	Optiva is gaining credentials and visibility through its partnership with GCP. Its number of deployments on both the private and public cloud is also increasing.
Weakness	Description
Financial issues	Optiva's revenue has continued to decline, which may impede the company's ability to engage with large Tier-1 CSPs. However, the company's cost structure has improved, which is leading it to profit.
Dependence on key customers	A large share of Optiva's revenue relies on a small number of customers. Indeed, Optiva's top 25 customers accounted for 77% of its total revenue in FY2019.

Source: Analysys Mason

Oracle: strategy overview

Oracle is a leading vendor in the telecoms software segment. It has a broad portfolio of BSS and OSS solutions, as well as a large presence in the enterprise software and middleware space.

Oracle Communications's group renamed Oracle Billing and Revenue Management (BRM) as the Oracle Cloud Scale monetisation portfolio in late 2021. The portfolio, which includes capabilities from previous offerings, is Oracle's primary monetisation platform for CSPs and has three distinct components: Cloud Scale Charging, Cloud Scale Billing and Cloud Scale Charging and Billing. Cloud Scale Charging and Billing offers the complete monetisation stack, while Cloud Scale Charging and Cloud Scale Billing are targeted at CSPs who are seeking complementary extensions to their existing systems.

The Oracle Cloud Scale monetisation portfolio gives CSPs a unified singular platform that can be used to monetise any type of application or use case, with scope for future extensions and integrations. The solution supports multiple deployment models including on-premises and hosted on the public (or private) cloud.

Oracle recently announced that the Oracle Cloud Scale platform can support in excess of 100 million concurrently active subscribers on Oracle Cloud Infrastructure (OCI). Oracle also supports the deployment of its solution on other public clouds.

Figure 30: Key data

Company details	<ul style="list-style-type: none"> ▪ Founded in 1977 ▪ Headquartered in Austin, Texas, USA, with offices worldwide ▪ 133 000 employees
Financial performance	<ul style="list-style-type: none"> ▪ Publicly traded ▪ FY2021 revenue: USD40.5 billion (+4% year-on-year)
Professional services, products and solutions	<ul style="list-style-type: none"> ▪ The Oracle Cloud Scale monetisation platform is a microservices-based, 5G-ready solution that supports the monetisation of a broad range of business services at scale. The solution includes three separate components. ▪ Oracle Coherence is an in-memory data grid that enables geo-redundancy for the resiliency and multi-site deployment of charging solutions with high performance and low latency.
Key customers	AT&T, Charter, DISH, KT, Swisscom, Telia, Vodafone and WinTre
Key partnerships	20 000 partners worldwide including Accenture, Deloitte, IBM and Tech Mahindra

Source: Analysys Mason

Oracle: analysis

Oracle is using the launch of the Oracle Cloud Scale monetisation portfolio as an opportunity to reboot its telecoms monetisation strategy. It plans to more-actively pursue the new prospects that have arisen due to ongoing 5G roll-outs.

Telecoms monetisation solutions are an important part of Oracle's communications portfolio. Oracle BRM has been deployed widely by CSPs of all tiers and in all regions. Oracle's strategy of working closely with multiple professional service providers has enabled the company to expand the customer base for BRM.

CSP monetisation remains a very mature segment, but the introduction of 5G and the resulting shift from diameter to HTTP/2-based interfaces will lead to a wave of new investments in this segment. By relaunching its monetisation portfolio at this time, Oracle is preparing to better address CSPs' apprehensions regarding the evolution of telecoms monetisation in the 5G era and hopes to better respond to competitor narratives. Oracle will continue to rely on partners as an important go-to-market channel, even as it continues to expand its own bank of consultants, who are playing an increasingly active role in new deployments.

Figure 31: Key strengths and weaknesses

Strength	Description
Broad portfolio of offerings	Oracle has a well-regarded portfolio of BSS and OSS offerings that are deployed across multiple Tier-1 and 2 CSPs worldwide.
Improved performance	Oracle claims to have low latency and efficient resource utilisation that suggests that Oracle Cloud Scale Charging can support in excess of 100 million concurrently active subscribers on OCI.
Go-to-market strategy	Oracle works with professional service providers such as Accenture and Tech Mahindra, which provides it with extensive sales channels.
Weakness	Description
Competition from key players	Oracle faces strong competition from established and well-entrenched vendors such as Amdocs, Ericsson and Netcracker.
Reliant on Oracle Coherence	Oracle's monetisation solution is reliant on Oracle Coherence to deliver scalability to its platform, which may be a concern for CSPs who are committed to other database technologies.

Source: Analysys Mason

Summary of other players in the monetisation platforms market [1/2]

Figure 32a: Other players in the monetisation platforms market

NAME	DESCRIPTION	WEBSITE
Cerillion	Cerillion is a provider of billing, charging and customer management systems. It was formed in 1999 following the management buy-out of the in-house customer care and billing product division of Logica.	www.cerillion.com
CHR Solutions	CHR Solutions provides a range of technology solutions to CSPs. Its flagship offering is the Omnia 360 suite, which is a pre-integrated customer relationship management and billing solution.	www.chrsolutions.com
Enghouse Systems	Enghouse Systems is a Canadian software and services company that was founded in 1984. Its business unit is focused on software for CSPs; it also provides software for the transport sector.	www.enghouse.com
FTS (part of Magic Group)	FTS is a provider of convergent billing, charging, customer care, policy control and payment software solutions. The company is based in Israel and has deployments in 50 countries.	www.fts-soft.com
SAP	SAP provides a strong cross-industry software platform for a wide variety of back-office applications. SAP's monetisation platforms solutions include convergent billing and mediation platforms.	www.sap.com
Subex	Subex is a provider of BSS software to CSPs. Its monetisation platforms offering includes products for partner and interconnect settlements. The company has over 300 installations in 70 countries.	www.subex.com
SunTec	SunTec is a provider of monetisation platforms and business assurance solutions to financial communications service industries. SunTec has clients in 60 countries including AT&T, Comcast and KPN.	www.suntecgroup.com
Syniverse Technologies	Syniverse Technologies is a leading provider of mobile roaming and data clearance and settlement services. It connects more than 1500 CSPs in 200 countries.	www.syniverse.com
Tech Mahindra	Tech Mahindra's offerings for CSPs include network services, data and analytics solutions, digital BSS solutions and digital platforms.	www.techmahindra.com

Summary of other players in the monetisation platforms market [2/2]

Figure 32b: Other players in the monetisation platforms market

NAME	DESCRIPTION	WEBSITE
Tecnotree	Tecnotree is a worldwide provider of telecoms software solutions for managing products, customers and revenue. Its monetisation platforms portfolio includes solutions for convergent charging and billing and wholesale billing.	www.tecnotree.com
Tomia (previously StarHome Mach)	Tomia is a provider of mobile roaming and data clearance and settlement services. The company is headquartered in Luxembourg and was formed from the merger of MACH and StarHome in 2013. The company merged with Telarix, a provider of business optimisation and settlement software, in 2018.	www.tomiaglobal.com
Whale Cloud (formerly ZTEsoft Technology)	Whale Cloud's monetisation platforms portfolio includes solutions for convergent billing, data monetisation and enterprise billing.	www.iwhalecloud.com



Executive summary

Market shares

Overall telecoms market context

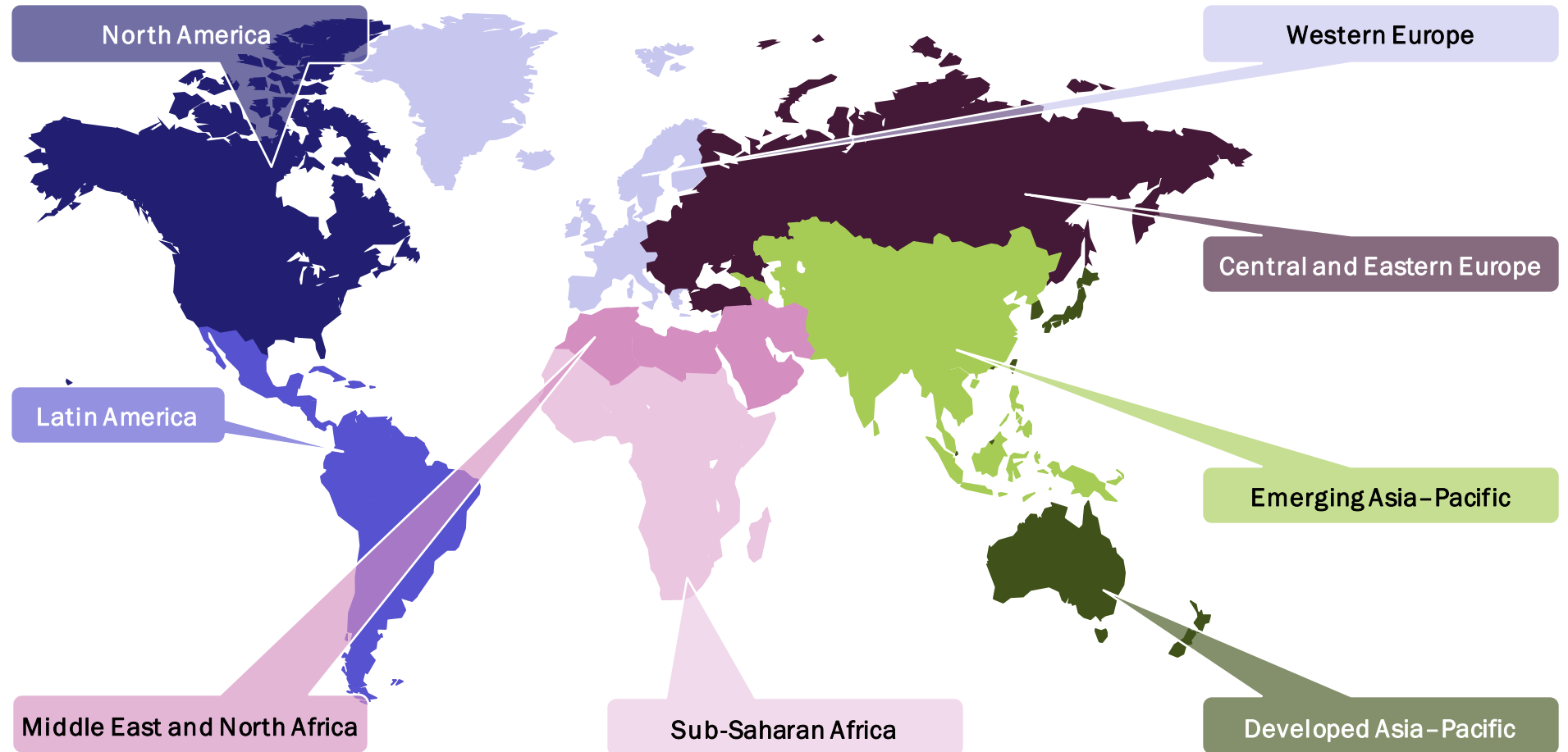
Vendor analysis

Market definition

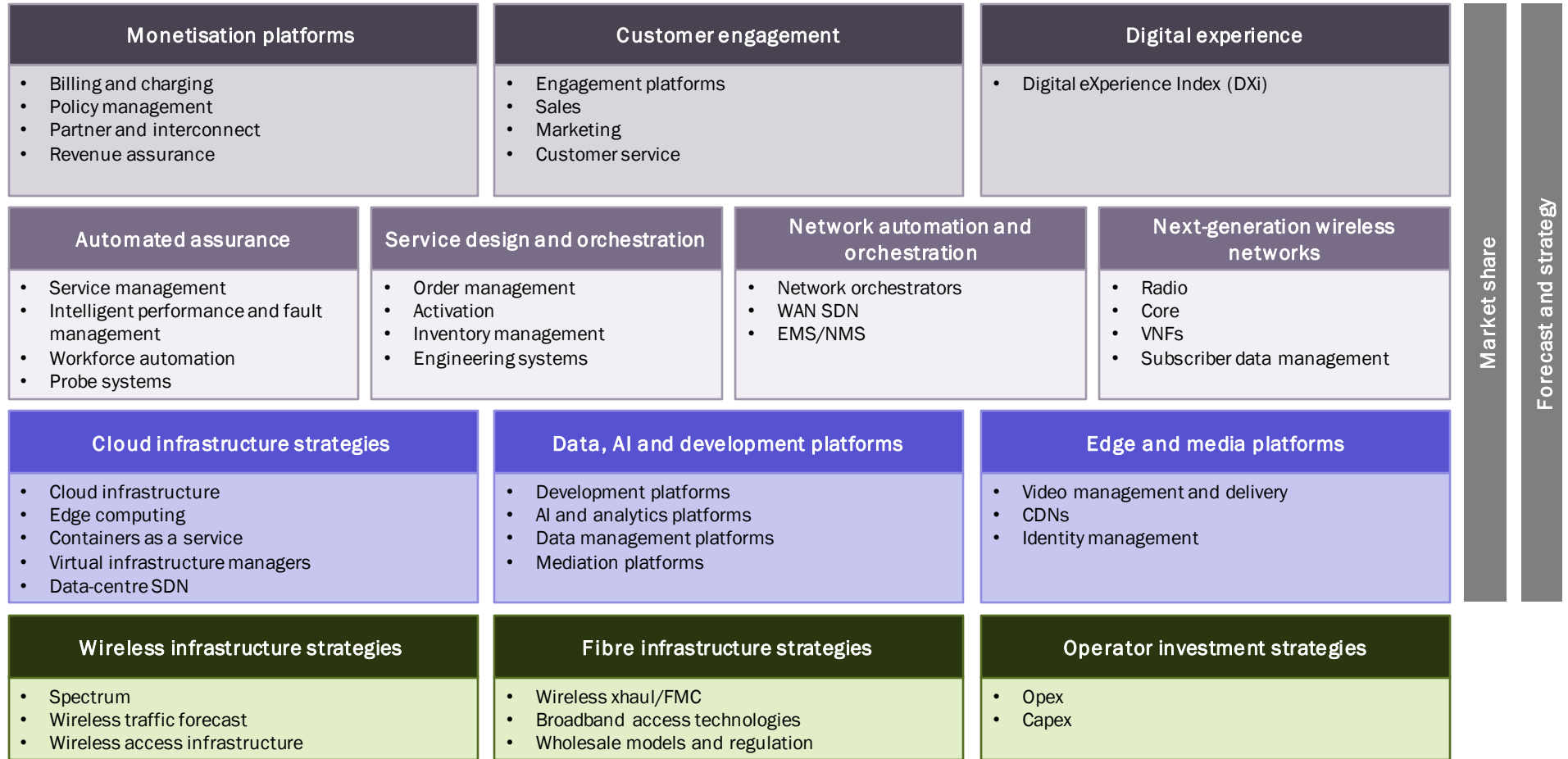
About the author and Analysys Mason

Definition of geographical regions

Figure 33: Regional breakdown used in this report



Telecoms software and networks market segmentation



Monetisation platforms definition

Figure 34: Definition of monetisation platforms

SEGMENT	DEFINITION
MONETISATION PLATFORMS	Monetisation platforms include billing and charging systems, partner management and interconnect systems, policy management systems and revenue assurance systems. These systems enable CSPs to track the use of their services, aggregate their records, compute charges, produce bills and process payments. The integrity of these systems is fundamental to CSPs' operations and crucial to the customer experience.

Definitions: product

Figure 35: Definition of product revenue

TYPE	DEFINITION
PRODUCT	<p>Product revenue includes that from licence software and maintenance, as well as a proportion of SaaS revenue that reflects the value of the software product used to provide the SaaS service. It also includes the proportion of the managed services revenue that reflects the value of the software product used to provide the managed services (see the 'Definitions: revenue distribution associated with delivery types' slide for more details).</p> <p>Product revenue also includes revenue from product-related services, such as installation, training and lifecycle management services related to a specific telecoms software deployment. This category also includes professional services related specifically to a supplier's own product. These are services that only the product supplier will be able to provide in nearly all cases. Services related to thirdparty products are part of the systems integration sub-category.</p>

Definitions: professional services [1/3]

Figure 36a: Definitions of professional services and its sub-categories

TYPE	DEFINITION
PROFESSIONAL SERVICES	Professional services revenue includes all software-related service revenue that is not explicitly tied to software products. This includes revenue from hosted/cloud, outsourced operations and systems integration and other services. These definitions include all the professional services that we previously covered, but we have adjusted the definitions of particular areas to embrace cloud as a way to provide hosted IT services and to reduce the number of distinct sub-segments for professional services.
HOSTED/CLOUD	Revenue from hosted/cloud delivery services includes that that is attributed to the vendor that hosts the product for the CSP. The product can be supplied by the vendor using its own or third-party infrastructure. The product can be delivered through a private traditional or cloud-based site, or on a public cloud.
OUTSOURCED OPERATIONS	This category accounts for revenue that is associated with managing systems for CSPs. It includes business process outsourcing (BPO). This category also includes revenue generated from outsourced operations that are professional or specialist services provided by external suppliers' human resources to operate and maintain a CSP's assets, which can include all related operational responsibilities. This involves the transfer of operations from a CSP to external suppliers. In this scenario, the assets (systems and software) are owned by the CSP and reside in the CSP's environment and the supplier manages the network from a CSP co-located site or other local or regional (for example, regional NOC) site. It includes responsibility for onsite operations and related activities in a particular country or region.
SYSTEMS INTEGRATION AND OTHER PROFESSIONAL SERVICES	This category covers all new development that is carried out uniquely for the CSP. This includes business consulting, design consulting, custom development and systems integration. Overall, systems integration accounts for the largest proportion of professional services, although any of the other areas may be the focus in any given deal.

Definitions: professional services – systems integration and other [2/3]

Figure 36b: Definitions of the systems integration and other professional services delivery type

TYPE	DEFINITION	
<p>SYSTEMS INTEGRATION AND OTHER PROFESSIONAL SERVICES</p>	<p>SYSTEMS INTEGRATION</p>	<p>Systems integration concerns the services required to manage and deliver major telecoms software projects in the OSS, BSS, NFV/SDN software and other applications areas to meet CSPs’ specific requirements. These are services that go beyond the boundaries of a single product or suite (such items are covered in the product-related services segment), and involve other systems in the CSP environment in order to meet the project’s requirements. This category includes, but is not limited to:</p> <ul style="list-style-type: none"> • integration with third-party (other vendor or proprietary) data sources, systems and interfaces, including VNF onboarding and data analytics/AI-driven automation applications • data loading and migration • customisation and configurations of software extensions and modules (without coding) to provide customised software features and capabilities, such as network equipment adapters, point-to-point interfaces and enterprise application integration (EAI) • detailed requirements, technical specifications and detailed designs • integration testing, not normal unit and functional system testing, such as for the integration of open multivendor components into a full stack solution (for example for open RAN implementations) • project management services. <p>Services related to third-party products (not owned by the supplier) are included in this systems integration sub-category.</p>
	<p>BUSINESS CONSULTING</p>	<p>Business consulting describes advisory services in the areas of business process, workflows, organisation issues and strategic planning, such as how to enter a market or how to package a service. This includes, but is not limited to transformational strategy, business case development and ROI modelling, business process re-engineering and optimisation, organisation restructuring, optimisation and change management, assisting CSPs to develop new products and services to deliver to their subscribers (ranging from tariffs to value-added services), go-to-market strategies, regulatory compliance review and reporting requirements and marketing and campaign strategies.</p>

Definitions: professional services – systems integration and other [3/3]

Figure 36c: Definitions of the systems integration and other professional services delivery type

TYPE	DEFINITION	
SYSTEMS INTEGRATION AND OTHER PROFESSIONAL SERVICES	DESIGN CONSULTING	Design consulting describes the provision of advisory design services prior to the implementation of a telecoms network, software and/or system in such areas as OSS, BSS and virtualised network or cloud architecture, automation, network planning and optimisation and data or information models. These services typically contribute towards developing requirements for procuring the systems and software needed. This category includes, but is not limited to network planning and optimisation designs for both fixed and mobile networks and their transition to virtual/hybrid networks, OSS, BSS, cloud and data analytics platforms, and integrated architectural design, developing technical requirement for tender documents, high-level migration plans and roadmapping, analysis of established systems, data modelling, high-level interface definitions and designs.
	CUSTOM DEVELOPMENT	Custom development refers to telecoms software that is written specifically for an individual CSP, typically as a result of its ownership of legacy and proprietary systems, software or interfaces. It includes any development that requires coding to meet an unusual requirement, such as the development of a customised application store on an SDP or Microsoft .NET platform, an API for interfacing with legacy or proprietary systems, data migration scripts and custom plug-ins for VNF or NFV/SDN-related functional integration. This is internal development that is typically performed by large CSPs. The spending in this category only includes CSP spending on paying other firms for custom development, not the spending required for their own staff to do custom development. This includes some applications development management (ADM).



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About the author



John Abraham (Principal Analyst) leads our digital transformation research, including three research programmes: *Customer Engagement*, *Monetisation Platforms* and *Digital Experience*. His areas of focus include customer journeys and experience, the impact of 5G on BSS systems, telecoms enterprise opportunities, cost transformation, ecosystems and value chains, and micro-services-based architecture models. John has over a decade of experience in the telecoms industry. At Analysys Mason, he has worked on a range of telecoms projects for operators in Africa, Europe, India and the Middle East. Before joining Analysys Mason, he worked for Subex, a BSS vendor, and before that for Dell in India. John holds a bachelor's degree in computer science from Anna University (India) and an MBA from Bradford University School of Management (UK).

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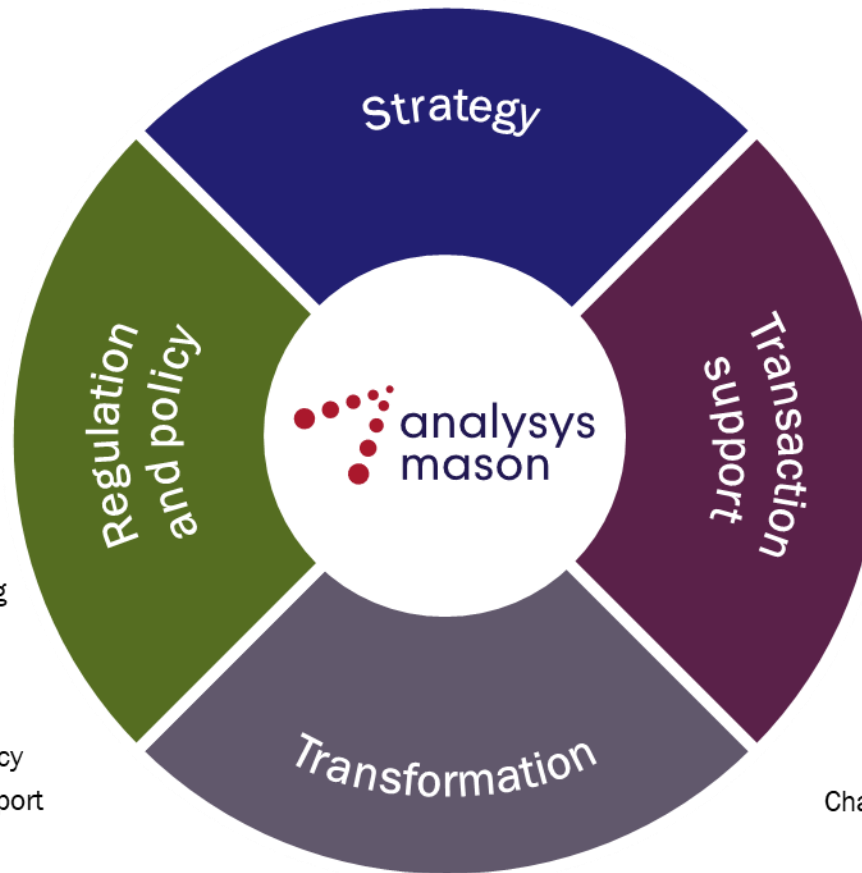
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