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Monetisation platforms: worldwide market shares 2020

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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 2020. 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.

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

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?

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.

Contents

CSPs continue to streamline legacy monetisation platforms by replacing them with agile and more efficient alternatives

Figure 1: Updated taxonomy for the monetisation platforms segment

We have removed mediation systems from our monetisation platforms segment and have added revenue assurance and fraud management.

CSPs are continuing to overhaul their legacy monetisation platforms. Net revenue for vendors declined by 1.1% year-on-year in 2020, but this masks CSPs' increased spending on newer and more efficient systems that are cheaper than the systems they replace. Cloud-native compliance, 5G readiness and ecosystem readiness are the key factors that CSPs focus on as they upgrade their incumbent systems. However, the critical nature of monetisation systems and CSPs' other investment priorities mean that the complete transformation of this segment will take at least a decade.

The adoption of SaaS-based solutions continues in this segment, especially in non-real-time scenarios such as billing. However, most CSPs continue to prioritise architectural evolution (from monolithic frameworks to microservices-based set-ups) over any particular delivery model.

The billing and charging sub-segment continues to account for the majority of monetisation platforms revenue (more than 68% in 2020), mainly due to the substantial costs associated with the support and maintenance of legacy systems. CSPs favour a phased approach to transforming their billing and charging systems, but cloud-native compliance has become an essential pre-requisite for new system deployments.

The roll-out of new charging systems to support 5G standalone traffic is underway; 5G-ready converged charging systems are a primary driver of new spending

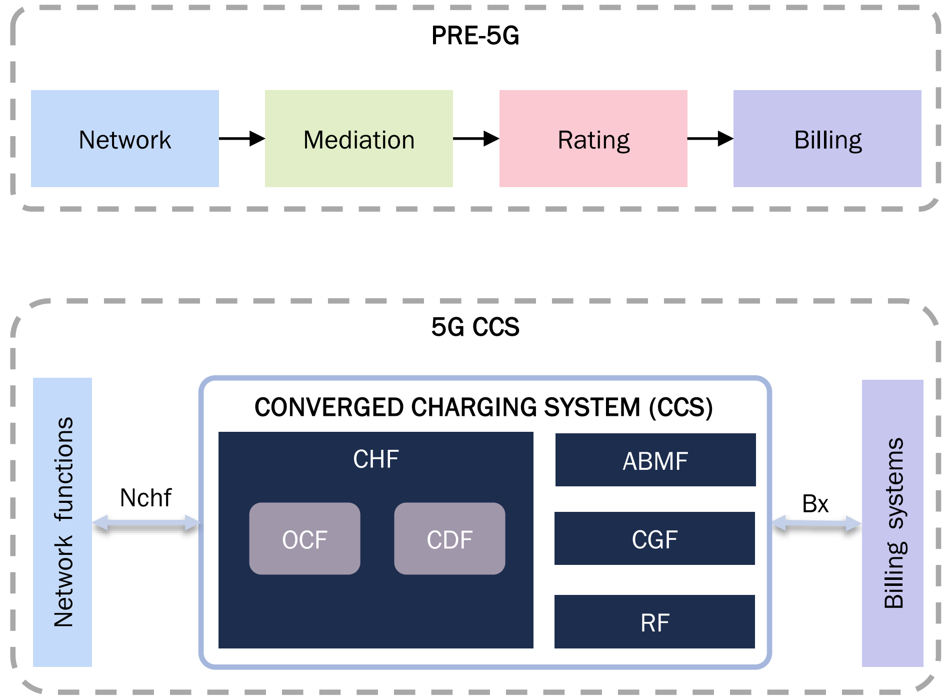
5G readiness is major driver of new spending on CSP monetisation systems. Converged charging systems (CCSs) are essential for CSPs to effectively monetise 5G standalone (SA) traffic.

Call data records (CDR) used to be the primary medium for tracking and charging any event on a CSP's network. These records flowed from the network switches all the way into the billing system. In 5G SA, information exchange happens over HTTP/2 (a signalling protocol), so existing monetisation frameworks that were built for the previous Diameter-based interfaces are no longer sufficient. Therefore, implementing new 5G-ready monetisation systems is a priority for CSPs.

CCSs are the heart of the 5G monetisation framework. They can be configured to handle non-5G traffic in the future as well, which will make it possible for CSPs to consolidate their multiple disparate charging frameworks.

5G only accounts for a small share of the overall revenue in the monetisation platforms segment today, but CCSs have become a strategic priority for vendors, especially since most CSPs are still considering their 5G monetisation strategies. 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.

Figure 2: High-level comparison of the billing and charging event flow in the pre-5G era with that using 5G CCS



Source: 3GPP and Analysys Mason

CSP are investing in capabilities for the effective monetisation of enterprise opportunities

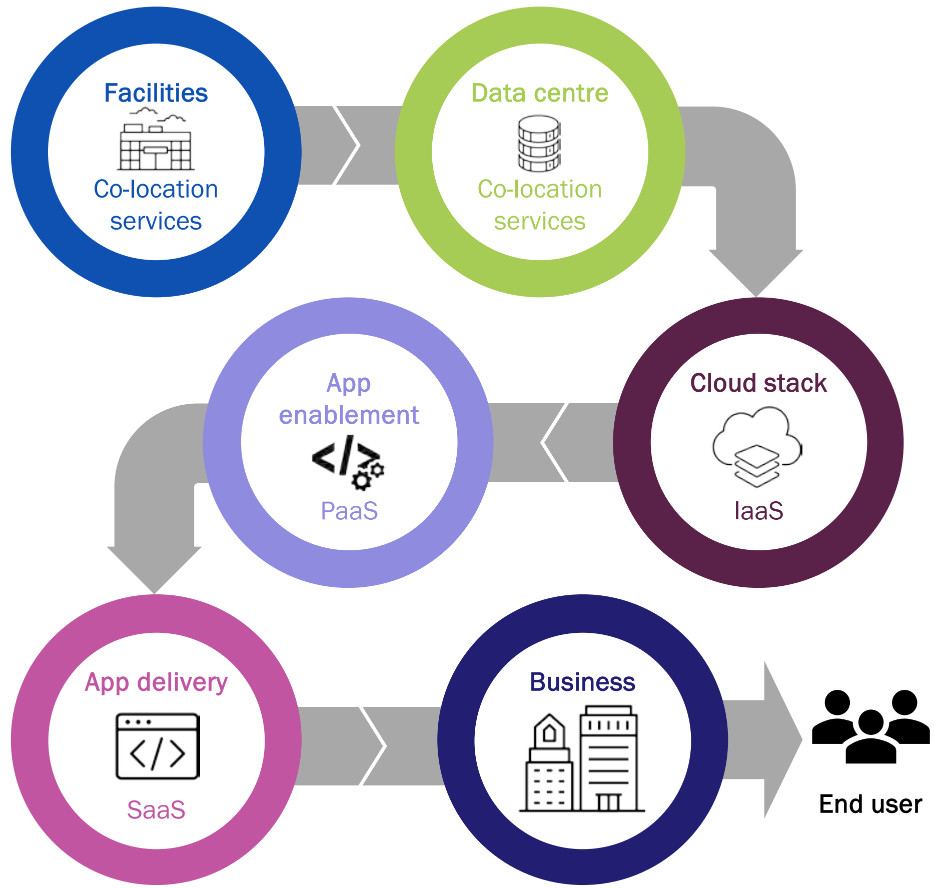
Advanced partner management capabilities that enable digital marketplaces are growing in importance as CSPs prepare to use 5G SA to expand their influence into the enterprise segment.

The effective monetisation of enterprise use cases is a priority, especially as CSPs focus on moving up the value chain and expanding their influence beyond connectivity. The inability of existing systems to support complex partner enablement and settlement models is an impediment to CSPs' ambitions to create ecosystems that are centred around enterprise value chains and applications.

CSPs are unlikely to adopt new systems based on traditional licensing models to support their digital marketplace initiatives. Instead, an increasing number of CSPs favour cloud-based pay-as-you-use systems that are easier to deploy, simpler to maintain and do not require large upfront investments.

CSPs are also in the early stages of investing into capabilities to use new value chain opportunities such as those around the public edge (Figure 3) and network slicing. Network slicing is expected to be an important avenue for new business models that will provide enterprises with greater control over telecoms network assets and will allow them to innovate with new applications and revenue models. As such, CSPs are prioritising capabilities for usage tracking and real-time B2B2X settlement.

Figure 3: The public edge cloud services value chain[1]



Source: Analysys Mason

[1] For more information, see Analysys Mason's Operator opportunities and threats in the public edge cloud computing market.

Key recommendations

1

Vendors should help CSPs to overcome the lack of clarity around future use cases by providing multiple upgrade paths to 5G CCSs.

The lack of clarity around the evolution of 5G architecture and the uncertainty surrounding future use cases are raising concerns about the ability of new monetisation systems to be futureproof. Vendors should address these concerns by providing multiple upgrade paths to CCSs and by offering greater visibility on the product roadmap in line with current and future 3GPP standards.

2

Vendors should offer greater clarity on their cloud-native compliance and roadmap to SaaS.

CSPs are emphasising architectural agility and configurability across their monetisation frameworks in order to reduce support costs and improve agility. Most vendor solutions currently claim to be cloud-native-compliant, but CSPs recognise the importance of characteristics such as microservices granularity and data management strategies in the agility and performance of a vendor solution. As a result, there is growing CSP interest in understanding microservices frameworks and the SaaS roadmap of vendors' solutions.

3

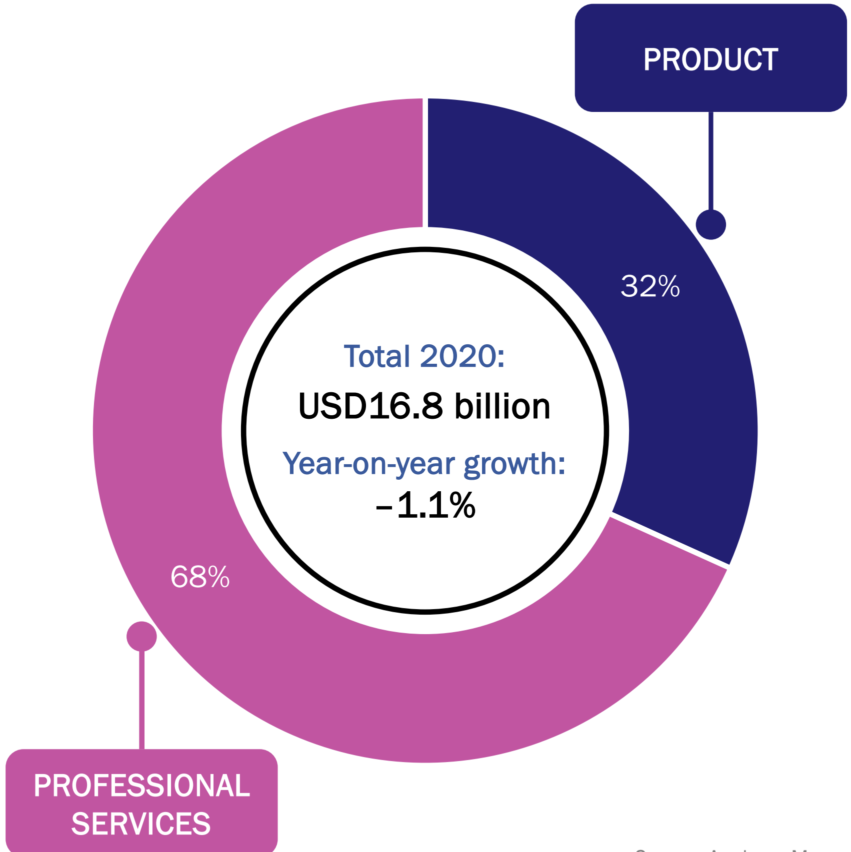
Vendors should highlight how they can support enterprise-specific marketplaces and related applications.

Advanced partner management capabilities that enable digital marketplaces are growing in importance as CSPs prepare to use 5G SA to increase their enterprise revenue. CSPs generally favour SaaS-based, pay-as-you-use models, but they are also keen to explore a hybrid approach wherein existing capabilities are combined with new systems to support digital marketplaces.

Contents

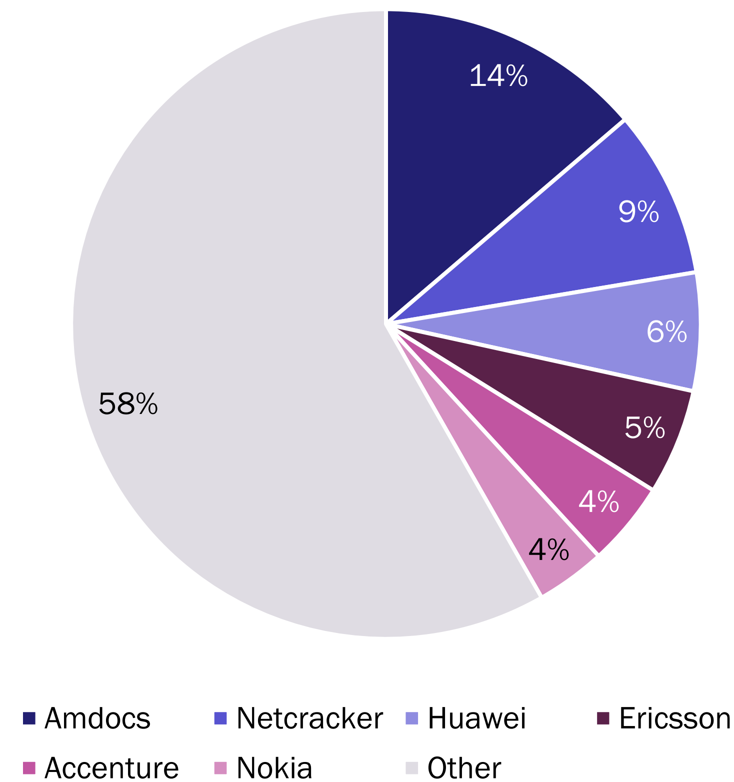
Monetisation platforms revenue market share

Figure 4: Monetisation platforms total revenue by type, worldwide, 2020



Source: Analysys Mason

Figure 5: Monetisation platforms total revenue by vendor, worldwide, 2020[1]

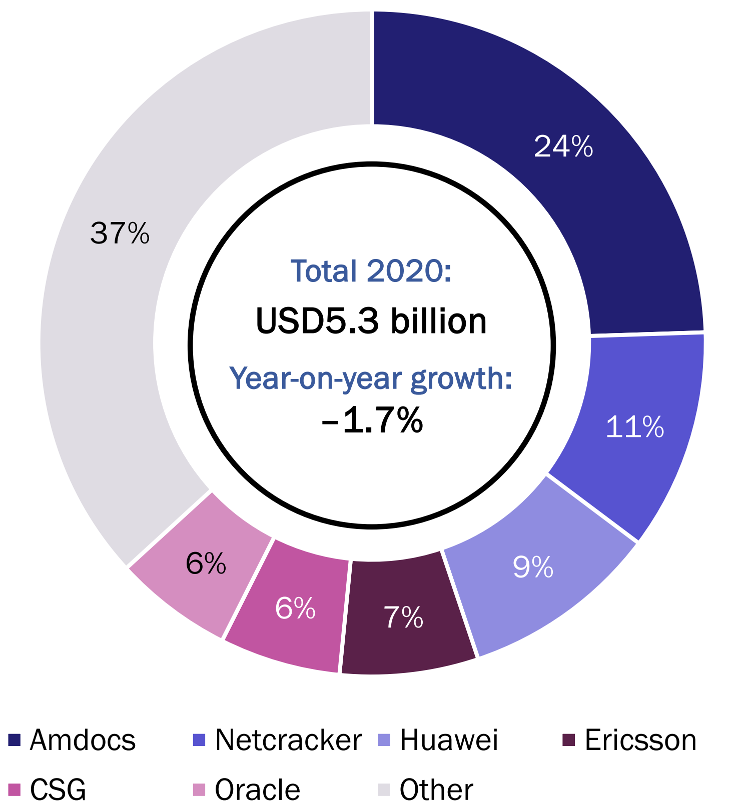


Source: Analysys Mason

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

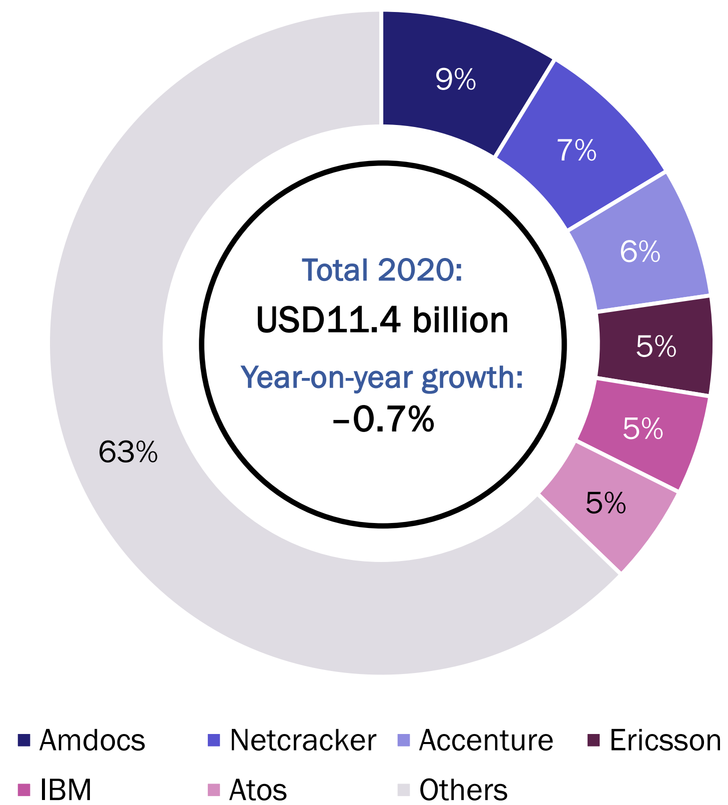
Monetisation platforms revenue market share

Figure 6: Monetisation platforms product revenue by vendor, worldwide, 2020[1]



Source: Analysys Mason

Figure 7: Monetisation platforms professional services revenue by vendor, worldwide, 2020[1]



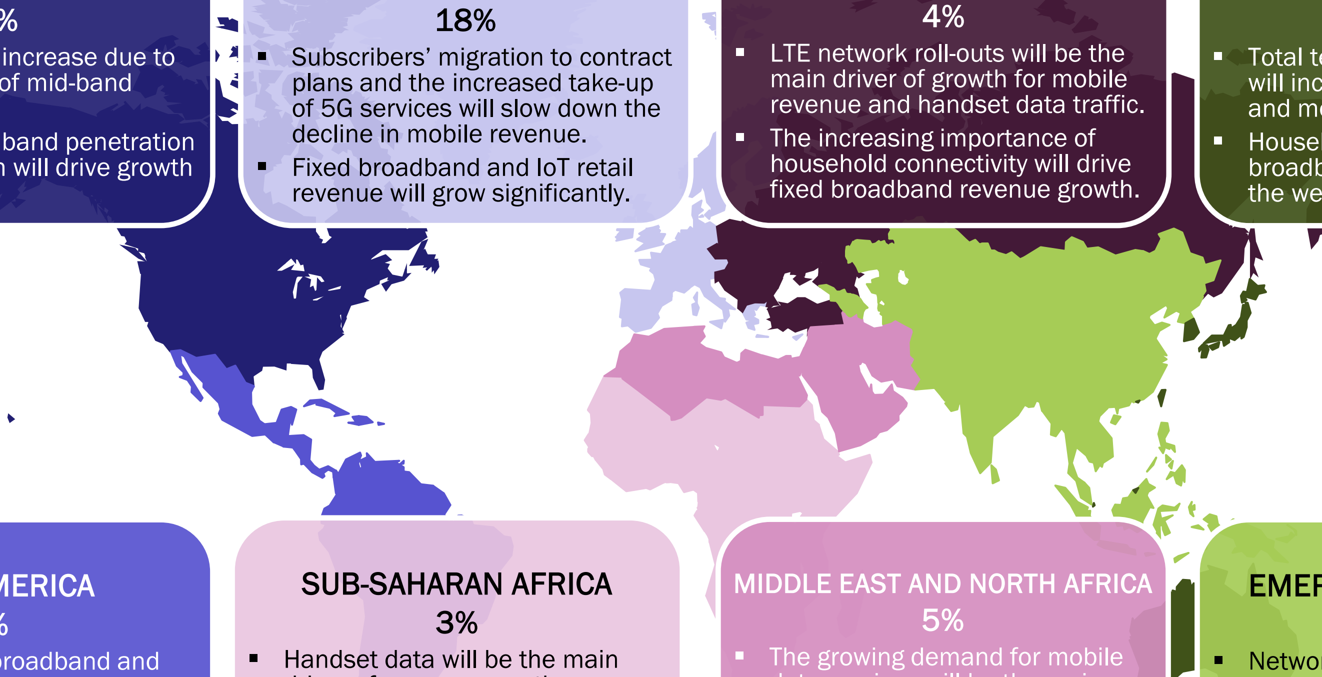
Source: Analysys Mason

[1] Other vendors include Capgemini, CGI Group, Comarch, Infosys Technologies, MATRIXX Software, Nexign, Optiva, Tata Consultancy Services, Tech Mahindra, Wipro Technologies and ZTE.

Contents

Overall telecoms services: revenue split and trends for regional markets

Figure 8: Share of worldwide USD1.498 trillion telecoms service revenue and trends by region, 2020



NORTH AMERICA
32%
- 5G adoption will increase due to the growing use of mid-band spectrum.
- Increasing broadband penetration and ASPU growth will drive growth in fixed revenue.

WESTERN EUROPE
18%
- Subscribers' migration to contract plans and the increased take-up of 5G services will slow down the decline in mobile revenue.
- Fixed broadband and IoT retail revenue will grow significantly.

CENTRAL AND EASTERN EUROPE
4%
- LTE network roll-outs will be the main driver of growth for mobile revenue and handset data traffic.
- The increasing importance of household connectivity will drive fixed broadband revenue growth.

DEVELOPED ASIA–PACIFIC
12%
- Total telecoms service revenue will increase due to faster fixed and mobile access speeds.
- Households will retain their fixed broadband connections despite the weakening economy.

LATIN AMERICA
5%
- Growth in fixed broadband and mobile handset revenue will drive overall revenue growth.
- The slow development of 5G services and the lack of suitable handsets will limit 5G adoption.

SUB-SAHARAN AFRICA
3%
- Handset data will be the main driver of revenue growth.
- The 5G share of mobile connections will be low and operators will continue to prioritise 4G network roll-outs.

MIDDLE EAST AND NORTH AFRICA
5%
- The growing demand for mobile data services will be the main driver of mobile revenue growth.
- The growth in fixed broadband revenue will outweigh the decline in fixed voice revenue.

EMERGING ASIA–PACIFIC
21%
- Network expansions and higher data use will drive growth in the number of mobile connections.
- Fixed and ICT service revenue will grow due to growth in the number of gigabit-capable connections.

Source: Analysys Mason

Overall telecoms services: regional service breakouts

Figure 9: Metrics for the eight regions modelled individually and worldwide, 2020

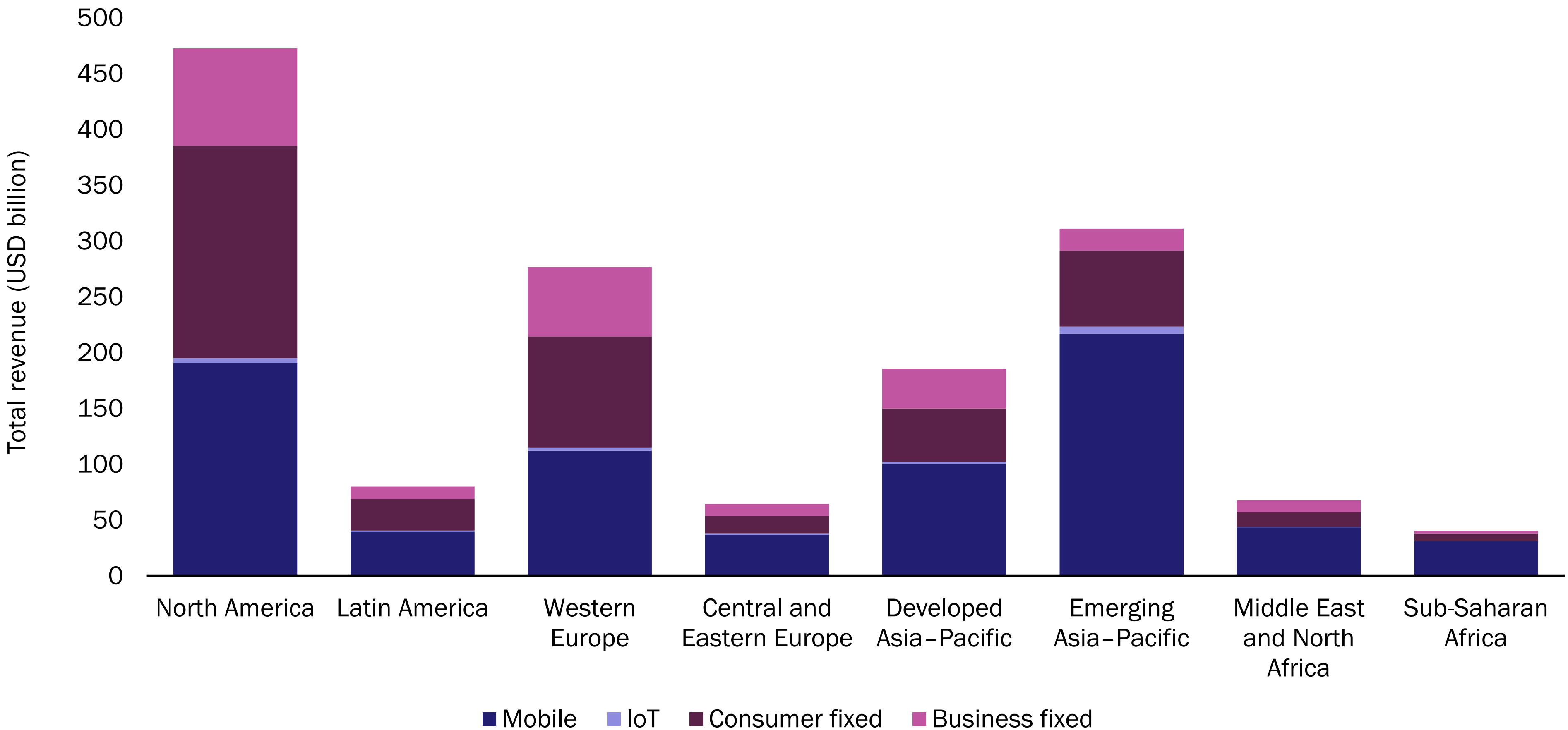
	Population (million)[1]	GDP (USD billion)[1]	GDP per capita (USD thousand)[1]	Telecoms revenue				Mobile SIM population penetration[2]	Fixed broadband population penetration[3]
				Mobile (USD billion)	IoT (USD billion)	Consumer fixed (USD billion)	Business fixed (USD billion)		
North America	369.9	22 400	60.6	190.5	4.7	190.0	87.3	103.5%	35.1%
Latin America	656.9	4 287	6.5	39.7	0.9	28.5	10.8	97.5%	14.2%
Western Europe	423.3	16 839	39.8	112.0	3.0	99.5	62.1	122.3%	40.2%
Central and Eastern Europe	408.2	4 021	9.9	36.7	1.4	15.6	10.9	131.7%	22.9%
Developed Asia–Pacific	247.2	9 426	38.1	100.4	1.7	47.8	35.7	125.5%	35.5%
Emerging Asia–Pacific	4107.0	21 239	5.2	217.0	6.3	67.9	19.9	93.1%	13.9%
Middle East and North Africa	467.3	3 538	7.6	43.4	0.7	13.1	10.3	103.7%	8.9%
Sub-Saharan Africa	1153.0	1 708	1.5	31.0	0.3	6.7	2.3	81.6%	0.6%
Worldwide	**7832.8**	**83 458**	**10.7**	**770.8**	**19.0**	**469.1**	**239.3**	**97.5%**	**15.3%**

Macroeconomic and general regional factors (such as population) provide significant 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 will drive fixed broadband revenue growth. The Middle East and North Africa and Sub-Saharan Africa will lag behind the other regions in terms of fixed broadband penetration due to affordability constraints and limited network footprints. 5G take-up will only begin to accelerate after 2021 due to the COVID-19 pandemic and related delays to 5G auctions. The roll-out of 5G networks and the launch of affordable 5G handsets will drive smartphone sales in the short-term in Western Europe, North America, developed Asia–Pacific and China, but sales will flatten in the long term because of saturation.

1 Population and GDP data is from the Economist Intelligence Unit. The rest of the data are from Analysys Mason's DataHub.
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, 2020



Source: Analysys Mason

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Overall telecoms services: investments and spending

Figure 11: Wireline and wireless capex, worldwide, 2017–2026[1]

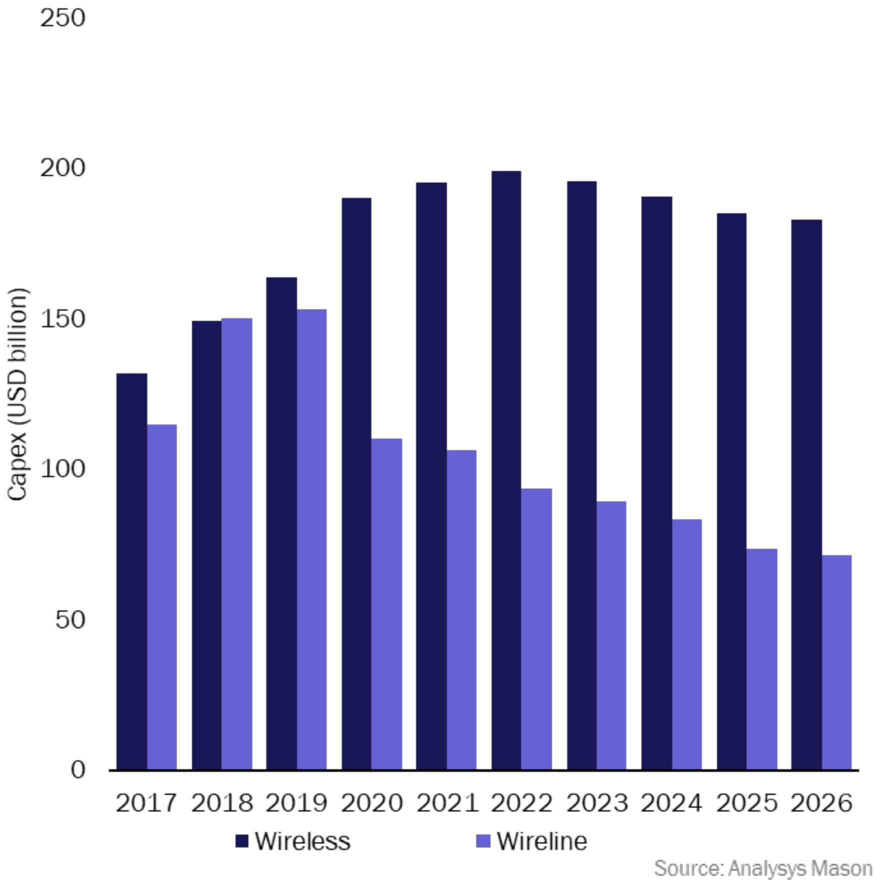
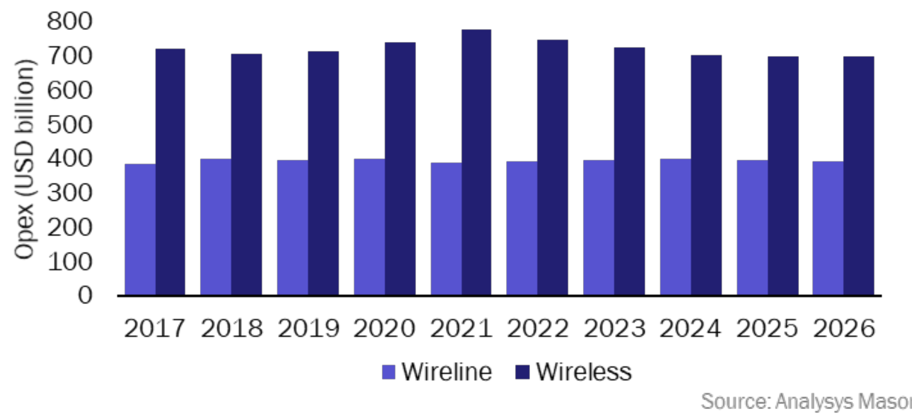


Figure 12: Wireline and wireless opex, worldwide, 2017–2026[2]



CSP spending on telecoms software is heavily influenced by both overall investment levels (capex) and overall expenses (opex).

Overall capex will increase by 3% between 2017 and 2026; it will reach USD254.3 billion by 2026. The decline in capex for wireline networks will be offset by the capex for operators' wireless networks, which will rise at a CAGR of 3.3% and will reach its peak in 2022. We believe that new architecture will boost spending on integration and software in some of the largest spending categories. Addressable revenue for vendors will increase as operators will generally outsource more software and network developments rather than hire in-house teams.

[1] For more information, see Analysys Mason's *Telecoms capex: worldwide trends and forecasts.*
[2] For more information, see Analysys Mason's *Telecoms opex: worldwide trends and forecast.*

Overall telecoms services: key industry drivers

Figure 13: key drivers of the telecoms software and services industry

Driver	Key elements	Discussion
5G	• 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 increasingly launching 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	• Moving current payloads to public cloud • Cloud-native development • Cloud technology for telecoms networks • Platform data services/AI • Edge computing	Cloud 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	• SD-WAN • IoT ecosystems • Cloud IT services • Enterprise digital experience/self-service • Private 5G	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. SD-WAN offers lower costs and faster deployments, thereby enabling new use cases. The interest in private 5G and edge is growing.
Digital transformation	• 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 lower network operational costs. All this has been made possible by underlying changes to enable the use of cloud methods and more cloud services.
Network disaggregation	• 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.

Contents

Accenture

www.accenture.com

Founded 1989

Accenture is a global professional services firm that offers consulting and operational services to multiple sectors, including banking, retail and telecoms.

Key relationships

- Nokia
- Oracle
- SAP

Dublin (HQ)

PRODUCTS AND SERVICES

- Accenture offers a range of services to the telecoms sector, including strategy and business consulting, outsourced operations and systems integration services.
- Its monetisation platform capabilities include support for convergent charging, billing support for enterprise customers and support for hybrid billing use cases.
- It also offers support for the effective monetisation of digital economy services, including IoT/M2M, as well as an extensive array of use cases around billing and charging for all sizes of CSP.

STRATEGY

Territory	Focus on expanding its footprint worldwide.
Products	Leading provider of professional services across multiple telecoms segments. Well-regarded expertise in integration, deployment and managed services as well as organisation and culture change.
Channels	The company will continue to expand and build relationships with established and emerging software vendors.

ANALYSIS

- Accenture has deployed monetisation platforms solutions at over 230 CSPs worldwide, which together support around 250 million subscribers.
- It has also been involved in the support and development of digital transformation programmes at multiple Tier-1 CSPs, giving it experience in supporting CSPs that are beginning their journeys to become digital service providers (DSPs).
- Digital transformation is driving CSPs to transform their workforces, which provides an advantage to companies such as Accenture that have experience in organisational change.

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MONETISATION PLATFORMS

Amdocs

www.amdocs.com

PRODUCTS AND SERVICES

- CES21 is Amdocs's 5G-native, microservices-based, BSS/OSS integrated suite, including digital commerce and care experience, monetisation and orchestration products for CSPs.
- Amdocs's monetisation suite includes a set of cloud-native, open, agile products for monetising 5G services, IoT and the digital ecosystem.
- Amdocs's 5G value plane solution includes the 5G-native monetisation suite, along with policy and charging control integrated with Amdocs's Catalog, NWDAF and NEF functions.
- Amdocs's Digital Brands is a digital BSS SaaS suite covering care, commerce, ordering, billing and charging for brands, low-tier CSPs and MVNOs.

Amdocs is a leading software product and services company specialising in BSS and OSS for the telecoms, media and entertainment industries.

Founded
1982

Key relationships

- AWS
- Microsoft
- Google
- VMWare

Chesterfield, MO (HQ)

STRATEGY

Territory	**Amdocs serves over 350 communications, pay-TV, entertainment and media industry service providers and banks across 85 countries.**
Products	**Amdocs has evolved its portfolio to be a fully cloud-native, 5G-compliant, open and modular microservices-based platform.**
Channels	**Amdocs has a diverse customer base supported by a broad portfolio of product offerings and is backed by competent professional services.**

ANALYSIS

- Amdocs has over 300 CSP customers worldwide. The top 10 customers account for 65% of Amdocs's revenue, which highlights Amdocs's role in the Tier-1 CSP segment, especially in developed regions.
- Amdocs plans to position its monetisation suite as the extensive, all-inclusive option for leading-edge CSPs with large operations, as well as 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 bill presentment, which provides an interactive bill experience for consumers and enterprises.

Aria Systems (Aria)

www.ariasystems.com

PRODUCTS AND SERVICES

- Aria's cloud billing and monetisation platform is a fully cloud-hosted solution for enterprises and CSPs that includes support for billing, provisioning and servicing.
- Aria's Marketplace Suite is an extension to its billing and monetisation platform to streamline digital marketplace operations and manage partner relationships.
- The Aria platform offers support for complex hierarchies and subscription linkages at multiple levels for IoT use cases. It also supports devices independently of accounts and can record and process non-billable IoT records.
- Aria's focus is to provide end-to-end monetisation platforms for enterprises and CSPs for B2B and B2C customers.

Aria Systems is a provider of cloud-based billing solutions for telecoms operators and enterprises.

Founded 2002

Key relationships

- Servicenow
- MATRIXX
- Tech-Mahindra

San Francisco, CA (HQ)

STRATEGY

Territory	**The company is focused on large enterprises, including CSPs, in developed markets.**
Products	**Aria will use its cross-industry expertise and invest in its platform to increase the coverage of IoT, OTT and use cases beyond the telecoms vertical.**
Channels	**Focus on partnering with product vendors and service providers to expand footprint among CSPs.**

ANALYSIS

- Aria does not compete directly with mainstream, on-premises CSP billing vendors. Instead, the company positions itself as a digital transformation accelerator that co-exists with incumbent telco billing and enterprise resource planning (ERP) systems.
- The company is focusing on developing APIs for legacy telecoms systems. It can offer out of the box integration to a number of legacy billing systems, which is a key differentiator and an advantage over other cloud-based billing vendors.
- Aria's portfolio is limited to billing, which makes it reliant on technology partners in order to sell to CSPs that are keen on broader solution suites.

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MONETISATION PLATFORMS

Atos

www.atos.net

PRODUCTS AND SERVICES

- Atos offers the following professional services.
  - **Transformation services.** These include front- and back-office services (customer engagement/ fulfilment, assurance, billing, OSS/BSS harmonisation and consolidation), data processing and network function virtualisation (NFV)/next-generation telecoms networks.
  - **Production excellence services.** These include secure operation of applications and infrastructure on hybrid cloud.

Atos offers business consulting services to multiple industry verticals including banking, retail, healthcare and telecoms.

Founded 1997

Key relationships

- Oracle
- SAP
- Siemens

Bezons, France (HQ)

ANALYSIS

- Atos's main customer base is in North America and Western Europe, but it has multiple subsidiaries worldwide, which it will use to expand further.
- Atos's revenue in the telecoms sector is driven by back-office innovation, next-generation networks and omnichannel customer engagement services and solutions.
- Revenue from its traditional SI business could come under pressure due to CSPs' desire for more productised solutions unless it focuses on open network integrations.

STRATEGY

Territory	It has focused on North America and Western Europe, but aims to expand to other regions.
Products	Positions its professional services offerings to support CSPs' digital transformation and cloud projects.
Channels	It will aim to cross-sell through its international subsidiaries.

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MONETISATION PLATFORMS

BearingPoint//Beyond

www.bearingpointbeyond.com

BearingPoint//Beyond is a digital platform solution and services provider that serves a global customer base, primarily in the telecoms industry

Founded 2017

Key relationships

- AWS

Graz (HQ)

PRODUCTS AND SERVICES

- BearingPoint//Beyond was launched in 2017. It brings together BearingPoint's BSS and digital business platform (DBP) solutions and services based on Infonova.
- Infonova BSS supports traditional telecoms use cases using a SaaS or on-premises model.
- Infonova DBP supports new business models that use a partner ecosystem for the co-creation of new digital services that are sold with or without CSP connectivity. DBP is mostly sold as SaaS.
- InfonovaGo, offered as SaaS, is a cross-industry cloud-based billing solution.

STRATEGY

	STRATEGY
Territory	BearingPoint//Beyond is primarily focused on Europe, North America and APAC.
Products	The company's portfolio helps clients to reinvent their business models to grow revenue. It helps CSPs to get a fast start in co-creating new multi-partner solutions.
Channels	It works with leading global systems integrators and tech providers, but also with CSPs' in-house IT teams. The company also partners with cloud-based ICT, AI and technology providers.

ANALYSIS

- The company is primarily positioning itself to support CSPs' ambitions to adopt a platform-based business model.
- BearingPoint//Beyond places a strong emphasis on rapid revenue growth through a focus on agile and iterative ways of working and using its partner ecosystem for co-innovation.
- From a technology standpoint, the company is investing in broadening the scope and functionalities of its application, while relying on AWS for middleware and compute and storage infrastructure.
- The company has faced challenges in expanding beyond its core market regions and application types.

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MONETISATION PLATFORMS

CGI Group

www.cgi.com

Founded
1976

CGI Group is a Canadian provider of IT consulting, systems integration and business process outsourcing services to enterprises and telecoms operators.

Key relationships

- Oracle
- SAP

Montreal (HQ)

PRODUCTS AND SERVICES

- Its cloud-based billing solution is based on CGI's Tapestry cloud billing offering.
- The CGI Tapestry solution offers convergent rating, billing and order management services.
- CGI offers systems integration and application management services for mediation systems by partnering with vendors such as Digital Route.
- The company offers consulting and system integration services for billing and charging use cases, with support from partners such as Oracle and SAP.
- INTransit is a mobile roaming billing solution that provides support for roaming partner billing use cases.

ANALYSIS

- Key customers include Bell Canada, Bell Mobility, Orange and Telenor Group.
- It offers a wide portfolio of solutions within the monetisation platforms segment by partnering with multiple small and large product vendors.
- CGI will need to offer greater differentiation and value to CSPs, as some of the larger billing vendors are expanding their services businesses.

STRATEGY

	STRATEGY
Territory	Europe, the Middle East and Africa (EMEA) accounts for around two thirds of its revenue; most of the rest comes from North America.
Products	It has a strong focus on CSP transformations and becoming a preferred digital transformation services partner for CSPs.
Channels	It will continue to expand its partner relationships, with a strong focus on developed regions.

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MONETISATION PLATFORMS

Comarch

www.comarch.com

PRODUCTS AND SERVICES

- Comarch's telecoms solutions portfolio supports end-to-end transformation programmes in the BSS, OSS and service assurance areas.
- For BSS, Comarch's offerings include billing, charging, revenue management, omnichannel customer experience and an IoT connectivity management platform.
- For OSS, Comarch focuses mostly on 5G network operations, SDN/NFV orchestration, resource management and service design and fulfillment.
- Comarch has strong delivery capabilities, primarily for integrating its portfolio within a telecoms environment.

Comarch is a global software house that delivers and integrates proprietary IT products for enterprises worldwide.

Founded
1993

Key relationships

- Salesforce
- SAP

Kraków, Poland (HQ)

STRATEGY

Territory	The company has a worldwide focus and most of Comarch's deployments are now in Europe, Latin America, the Middle East and Asia–Pacific
Products	It has a focus on full-stack solutions, even as it continues to use its modular portfolio and delivery capabilities to win new clients.
Channels	The company mostly relies on direct sales channels and a handful of local partners for delivery.

ANALYSIS

- Comarch is considered to be a cost-effective full stack alternative to leading vendors, especially in emerging markets.
- The company has well-regarded professional services capabilities and prefers to manage the integration of its portfolio within the CSP environment.
- The company continues to achieve steady growth in its telecoms business, even as it expands into new verticals.

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MONETISATION PLATFORMS

CSG

www.csgi.com

PRODUCTS AND SERVICES

- CSG Ascendon is a cloud-based monetisation and engagement platform for digital services that supports multiple business lines.
- The CSG Singleview suite provides an integrated customer care, billing and real-time rating and charging solution, and can be delivered either on-premises or in a cloud-hosted environment.
- Advanced Convergent Platform (ACP) is a pre-integrated billing and customer care platform for cable and satellite providers.
- CSG Digital Wholesale, a partner management and settlements system, is delivered in either a cloud or standalone environment.

CSG is a major provider of customer engagement solutions that help companies to acquire, monetise, engage and retain customers.

Founded
1994

Key relationships

- Microsoft
- AWS
- Accenture

Greenwood Village, CO (HQ)

STRATEGY

Territory	**CSG serves over 350 communications and media customers worldwide with well-established regional support and development centres.**
Products	**CSG is focused on cloud-first, cloud-native architecture. SaaS underpins the vast majority of CSG's products.**
Channels	**CSG continues to expand into other verticals including financial services, media and entertainment and healthcare.**

ANALYSIS

- CSG is focusing on a productised, cloud-first, DevOps-ready strategy to expand its footprint.
- With CSG Ascendon, the company is positioned to address the growing digital services segment with flexible, cost-optimised solutions that can enable CSPs to experiment with next-generation business models.
- CSG Singleview remains an important part of the portfolio and helps to deliver complex, multi-play monetisation solutions on a configuration-based platform.
- CSG also has a well-regarded mediation and wholesale platform that continues to be widely deployed worldwide.

Ericsson

www.ericsson.com

PRODUCTS AND SERVICES

- Ericsson Digital BSS is the company's portfolio of offerings covering all BSS components.
  - Ericsson Digital Monetisation Platform is a product catalogue-enabled, convergent charging and billing solution.
  - Ericsson Charging is a modular, scalable, open, single convergent online charging system (OCS) that uses industry standards and protocols.
  - Ericsson Billing is a convergent, end-to-end billing system for CSPs.
  - Catalog Manager is a centralised catalogue management systems for BSS and OSS.

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

Founded
1876

Key relationships

- Accenture
- TCS
- Capgemini

Stockholm (HQ)

STRATEGY

Territory	**Ericsson will continue to focus on growth in emerging markets as sales in mature markets slow down.**
Products	**The company will focus on 5G and digital transformation with a greater emphasis on the continuity and extension of existing systems along with associated professional services.**
Channels	**Ericsson intends to cross-sell and upsell to its established large CSP customers in order to develop deeper relationships with them.**

ANALYSIS

- Ericsson is a well-regarded vendor in the monetisation platforms segment thanks to its history of providing products for networks and real-time charging.
- Ericsson is well-connected to different buying centres within CSPs due to its extensive networks portfolio.
- The company has a well-regarded managed services business, which continues to grow.
- Ericsson continues to have a strong brand and worldwide channel coverage.

Huawei Technologies

www.huawei.com

PRODUCTS AND SERVICES

- Huawei's Convergent Billing System (CBS) R20 is a 5G standalone network-based 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 focuses primarily on supporting CSPs' digital transformations.
- The company is also investing in developing cloud-based BSS stacks for enterprise-focused use cases.

Huawei Technologies provides network infrastructure, software solutions and professional services to the telecoms and enterprise sectors.

Founded
1987

Key relationships

- Accenture
- SAP

Shenzhen (HQ)

ANALYSIS

- Huawei's CBS currently serves 2.3 billion subscribers with more than 200 CSPs around the world.
- Current geopolitical factors have limited Huawei's reach and ability to work with certain customers and partners.
- Huawei continues to serve its multiple monetisation platform customers, but the company has increased its focus on providing cloud-based platforms for B2B use cases.
- Huawei's early monetisation platform implementations were heavily customised. There is a greater emphasis on standardisation in recent deployments.

	STRATEGY
Territory	Huawei has always been strong in China. The company is increasing its focus on emerging markets in Asia, Africa and Latin America.
Products	Its portfolio spans the entire breadth of the monetisation platforms segment, with a strong emphasis on B2B use cases.
Channels	Huawei is increasing its focus on digital transformation through managed services as well as cloud-based deployments.

IBM

www.ibm.com

PRODUCTS AND SERVICES

- IBM's telecoms solutions focus around:
  - customer experience
  - operational efficiency
  - network optimisation.
- For customer experience, IBM offers customer engagement and digital interactions.
- For operational efficiency, IBM offers support for end-to-end BSS transformation projects.

IBM is a global technology firm that is a leading provider of cloud computing and business consulting services to enterprises worldwide.

Founded
1911

Key relationships

- Amdocs
- Oracle
- SAP

Armonk, NY (HQ)

ANALYSIS

- The company continues to play a role in the monetisation platforms segment by virtue of its broad SI and consulting experience and deep relationship with CSPs.
- It is using its analytics and deep search capabilities (Watson) for multiple verticals, including telecoms.
- It is a strong e-commerce player in the enterprise market and is applying this experience to expand in the telecoms sector.

STRATEGY

Territory	**It has a global footprint and will continue to focus on delivering to its customers worldwide.**
Products	**It will use its analytics and business process optimisation expertise to serve telecoms software segments.**
Channels	**IBM will continue to use its relationships with, and business strategy expertise in, other sectors to expand in the telecoms market.**

MATRIXX Software

www.matrixx.com

Founded 2009

MATRIXX Software is a provider of digital BSS technology to CSPs worldwide.

Key relationships

- Salesforce
- Tech Mahindra

Saratoga, CA (HQ)

PRODUCTS AND SERVICES

- MATRIXX Software's Digital Commerce Platform (DCP) is a single cloud-native platform for creating, selling, delivering and monetising digital services.
- MATRIXX Software's DCP includes a network-grade online or converged charging system (OCS/CCS) that enables the efficient hyper-scaling 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.

ANALYSIS

- MATRIXX Software has a well-regarded cloud-native charging engine that is deployed by multiple Tier-1 CSPs. It has a range of technology partnerships with SIs and vendors.
- MATRIXX Software's 5G vision is to deliver a single commerce platform that can cater for all network types and all customer segments.
- 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.
- The company is reliant on technology and delivery partners to sell and deliver solutions to CSPs.

STRATEGY

Territory	The company already has major customers in NA, Europe, the Middle East and APAC, and is aiming to forge relationships in new markets.
Products	It is working to operate in a multi-vendor ecosystem and will therefore aim to marry its software with other industry-leading technology.
Channels	MATRIXX is developing technology and delivery partnerships to improve channel coverage and widen its reach.

Netcracker

www.netcracker.com

Founded
1993

Netcracker, a wholly owned subsidiary of NEC, is a leading provider of BSS, OSS and SDN/NFV specialising in monetisation platforms and network management.

Key relationships

- AWS
- Google
- Microsoft

Waltham, MA (HQ)

PRODUCTS AND SERVICES

- The Netcracker portfolio is a full-stack, modular communications infrastructure solution that supports OSS and BSS functions. The platform is 5G-ready and cloud-native-compliant.
- Netcracker Digital BSS solutions and services help CSPs to launch and monetise 5G, IoT and cloud services, expand partner ecosystems and access new revenue streams.
- Netcracker Cloud BSS, which comprises marketing and commerce, sales and customer services and revenue management modules, is focused primarily on the needs of smaller service providers.
- Netcracker also has platform management and analytics capabilities.

STRATEGY

Territory	The company has a worldwide focus, backed by NEC's large services team.
Products	Netcracker has a strong focus on cross-selling BSS solutions to its installed base of customers.
Channels	It plans to pursue up-sell opportunities with existing customers, while also using NEC's footprint to expand its customer base.

ANALYSIS

- 5G monetisation is an important focus area. Other key capabilities of the Netcracker portfolio include common unified product catalogue, advanced partner lifecycle management framework and support for digital marketplaces.
- Netcracker Cloud BSS supports SaaS delivery models, although many CSPs continue to favour traditional licensing models.
- The company has extensive managed services expertise and a good delivery record for large-scale transformations across CSPs of all tiers.
- Netcracker focuses on providing SI work only for its own products.

Nexign

www.nexign-systems.com

PRODUCTS AND SERVICES

- Nexign Network Monetisation (NWM) suite is a 5G-ready suite for real-time rating, charging, policy and session control. NWM includes multiple pre-integrated modules such as OCS, PCRF, UDR, and SCEF.
- Nexign's Digital BSS suite is a convergent pre-integrated offering that covers core BSS functions running as microservices within containers in an elastic Kubernetes environment using DevOps processes and continuous delivery workflows.
- Nexign IoT Platform is a telco-grade connectivity management platform that delivers vendor-agnostic integration with BSS solutions and supports eSIM and non-IP data delivery in NB-IoT use-cases.

Nexign (formerly known as Peter-Service) is a leading provider of telecoms software and services for CSPs.

Founded
1992

Key relationships

- IBM
- Oracle
- HP

St. Petersburg (HQ)

STRATEGY

Territory	**Nexign has a strong presence in the CIS region and is gaining a foothold in the MEA region. The company also intends to expand its business into emerging markets in Southeast Asia and Latin America.**
Products	**Nexign will use 5G and eSIM technologies to drive product development and will continue to invest in strengthening its BSS portfolio organically and through partnerships.**
Channels	**Nexign is prioritising the growth of its global and regional partner network to maximise its footprint in the target regions.**

ANALYSIS

- Nexign's BSS portfolio accounts for majority of its revenue. Nexign's key areas of focus include the evolution of the core BSS in terms of resource optimisation, increasing platform scalability and accelerating new service delivery.
- Nexign has a dominant position in the Commonwealth of Independent States (CIS) region.
- The company has focused on the telecoms segment while expanding its presence in emerging markets.
- The company is positioning itself as a value leader that can provide modular transformation in a short timeframe.

Nokia

www.nokia.com

PRODUCTS AND SERVICES

Nokia's multi-vendor monetisation solution includes:

- Nokia Converged Charging (formerly Smart Plan Suite) for real-time rating and charging
- Nokia Policy Controller (formerly Smart Plan Suite) for seamless PCF/PCRF
- Nokia Customer Insights for customer experience insights for monetisation purposes
- links with technology partners to provide adjacent BSS capabilities
- other services such as BSS transformation consulting, deployment and systems integration, BSS operations and managed services and BSS SaaS/PaaS offerings.

Nokia is a global technology firm that provides network equipment, software, services and licensing solutions to CSPs and enterprises in the private and public sectors.

Founded
1865

Key relationships

- Salesforce
- Accenture
- Microsoft

Espoo (HQ)

STRATEGY

Territory	Nokia has a worldwide focus.
Products	The company has adopted a strategy centred around its monetisation components offered as a best of breed or best of suite through pre-integrated partners.
Channels	Nokia is addressing CSPs of all sizes and increasingly enterprises, either directly or jointly with a growing ecosystem of partners.

ANALYSIS

- Nokia has streamlined and consolidated its monetisation offerings following several acquisitions.
- Its monetisation solution is fully based on Nokia Software's Common Software Foundation and Common Service Delivery Framework.
- The company made considerable investments to make its portfolio fully cloud-native-compliant in 2020.
- Nokia's monetisation solution does not have a billing or partner management platform; the company continues to rely on partners for this.
- Nokia has a strong services division, but it increasingly works with SI partners to complement its offerings and gain access to new markets.

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MONETISATION PLATFORMS

Optiva

www.optiva.com

Founded
1999

Optiva (formerly Redknee), is a provider of mission-critical, cloud-native, over-the-public-cloud monetisation solutions for CSPs worldwide.

Key relationships

- Google
- Microsoft
- Red Hat

Mississauga, Ontario (HQ)

PRODUCTS AND SERVICES

- Optiva's BSS platform is an end-to-end monetisation platform that is available on private or public cloud, including online charging and billing, integrated customer management, product catalogue and order management, multi-channel customer care and dealer and wholesale management.
- Optiva Charging Engine is a cloud-native, real-time convergent charging solution for telecoms connectivity, including 5G, 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.

STRATEGY

Territory	**Worldwide focus.**
Products	**Optiva is focused on supporting CSPs in their digital transformation journeys with cloud-native charging engine and/or full stack BSS platforms.**
Channels	**The company plans to enhance its relationship with existing customer base a well as target new Tier-1 and Tier-2/3 CSPs and MVNE/Os with new offerings and products.**

ANALYSIS

- Optiva recently secured a USD20 million investment into its R&D allowing it to open new excellence centres and develop new capabilities for 5G.
- Optiva is positioning itself as an enabler of value-based transformations, with priority placed on a swift time to market and low total cost of ownership (TCO).
- The company has won new deals over the past year with Tier-1/2 CSPs and MVNOs on private and public cloud.
- Optiva's revenue comes primarily from sales of software licences and subscriptions, professional and managed services and customer support contracts.

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MONETISATION PLATFORMS

Oracle

www.oracle.com

Founded
1977

Oracle is one of the world's leading providers of enterprise software, and is a leading provider of BSS and OSS solutions for the telecoms industry.

Key relationships

- Accenture
- Wipro
- Covalense

Austin, TX (HQ)

PRODUCTS AND SERVICES

- Oracle Communications Billing and Revenue Management (BRM) is a cloud-native end-to-end monetisation platform for communications, IoT, cloud, smart-city and media service providers.
- Elastic Charging Engine is BRM's offline and online charging engine. It can rate any metric or attribute using an in-memory charging grid.
- Oracle Network Charging and Control is an online charging solution for MVNEs/MVNOs in prepaid-dominant mobile markets.
- Oracle's Cloud Native Converged Policy Solution manages 4G and 5G network policies in an intuitive and consistent manner, while enabling seamless interworking and migration between 4G and 5G.

STRATEGY

Territory	Oracle is using its strong brand and extensive sales channels to expand its business worldwide.
Products	Oracle has rearchitected its portfolio to be cloud-native compliant. The company is also increasing its focus on cloud-based delivery models.
Channels	Professional service providers remain an important channel to market for the Oracle monetisation portfolio.

ANALYSIS

- Oracle has a strong brand and broad product portfolio of enterprise- and telecoms-specific software, which ensures its relevance at multiple levels within CSPs.
- Oracle's BRM solution is widely deployed across a large number of CSP customers. The BRM solution was rearchitected to be cloud-native compliant and is the company's primary offering in this segment.
- Oracle's portfolio is 5G-compliant and the company already has 12 5G standalone wins and engagements underway.
- The company provides its own consulting services as well as a global network of certified partners to deploy and manage its solutions.

analysys mason SNAPSHOTS

MONETISATION PLATFORMS

Tata Consultancy Services (TCS)

www.tcs.com

PRODUCTS AND SERVICES

- Tata Consultancy Services is a USD22 billion IT services and consulting firm headquartered in India. The company has a large practice that provides professional services to CSPs worldwide.
- Hosted BSS/OSS (HOBS) is TCS's cloud-native, multi-tenant, digital subscription management platform for CSPs and enterprises.
- HOBS supports industry-standard business processes and TMF-compliant open APIs out of the box and is designed to enable ecosystems and subscription models. The product has also been deployed in verticals such as manufacturing, utilities and retail.

TCS is an IT technology firm that offers professional services and BSS/OSS solutions for CSPs and other industry verticals.

Founded 1968

Key relationships

- Avaya
- Oracle
- SAP

Mumbai (HQ)

ANALYSIS

- The company has a strong brand, extensive sales channels and relationships with CSPs of all sizes worldwide.
- HOBS provides a broad portfolio coverage in BSS/OSS with a modular portfolio that is microservices-based and offers support for DevOps frameworks.
- TCS faces a conflict of interest in its relationship with its product partners, even as it expands its own competing portfolio of solutions.

STRATEGY

Territory	The company will continue to focus on expanding its global footprint.
Products	It will enhance its service offerings to support CSPs' digital transformation needs and moves to the cloud.
Channels	It will continue to expand its partner relationships in adjacent areas of telecoms.

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

Figure 14a: Other players in the monetisation platforms market

NAME	DESCRIPTION	WEBSITE
AsiaInfo	AsiaInfo is a China-based BSS/OSS vendor that offers monetisation platforms services for the telecoms industry.	www.asiainfo.com
Cerillion	Cerillion is a provider of billing, charging and customer management systems. It was formed in 1999 following the management buyout 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, and 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 is a leading provider of mobile roaming and data clearance and settlement services. The company connects more than 1500 CSPs in 200 countries.	www.syniverse.com

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

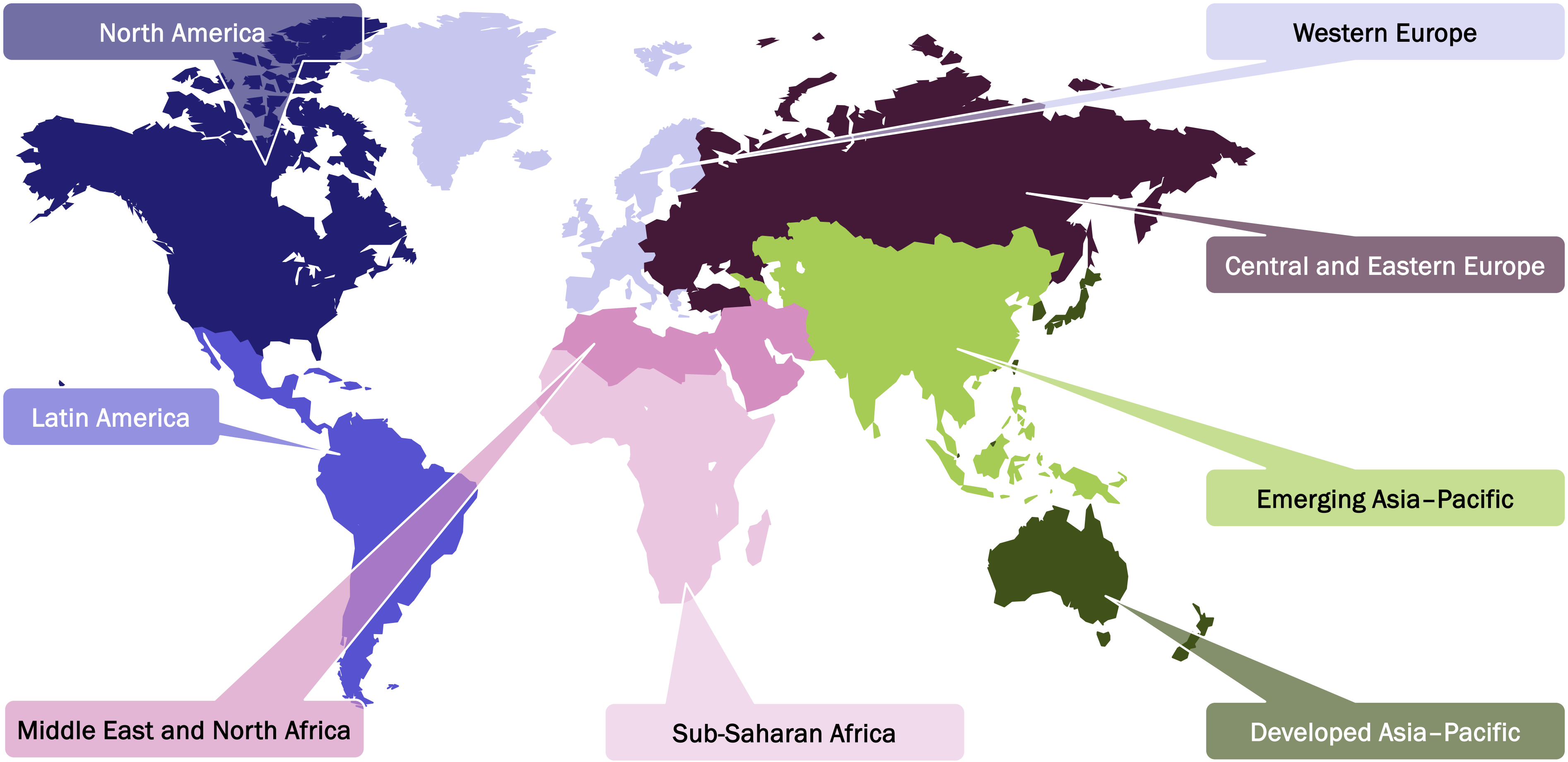
Figure 14b: Other players in the monetisation platforms market

NAME	DESCRIPTION	WEBSITE
Tech Mahindra	Tech Mahindra's offerings for CSPs include network services, data and analytics solutions, digital BSS solutions and digital platforms.	www.techmahindra.com
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

Contents

Definition of geographical regions

Figure 15: Regional breakdown used in this report



Telecoms software and networks market segmentation

Monetisation platforms
- Billing and charging
- Policy management
- Partner and interconnect
- Revenue assurance

Customer engagement
- Engagement platforms
- Sales
- Marketing
- Customer service

Digital experience
- Digital eXperience Index (DXi)

Automated assurance
- Service management
- Intelligent performance and fault management
- Workforce automation
- Probe systems

Service design and orchestration
- Order management
- Activation
- Inventory management
- Engineering systems

Network automation and orchestration
- Network orchestrators
- WAN SDN
- EMS/NMS

Next-generation wireless networks
- Radio
- Core
- VNFs
- Subscriber data management

Cloud infrastructure strategies
- Cloud infrastructure
- Edge computing
- Containers as a service
- Virtual infrastructure managers
- Data-centre SDN

Data, AI and development platforms
- Development platforms
- AI and analytics platforms
- Data management platforms
- Mediation platforms

Edge and media platforms
- Video management and delivery
- CDNs
- Identity management

Wireless infrastructure strategies
- Spectrum
- Wireless traffic forecast
- Wireless access infrastructure

Fibre infrastructure strategies
- Wireless xhaul/FMC
- Broadband access technologies
- Wholesale models and regulation

Operator investment strategies
- Opex
- Capex

Market share

Forecast and strategy

Applications

BSS OSS Cloud Networks

Monetisation platforms definition

Figure 16: 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 17: Definition of product revenue

TYPE	DEFINITION
PRODUCT	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). 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 third-party products are part of the systems integration sub-category.

Definitions: professional services [1/3]

Figure 18a: 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 18b: Definitions of the systems integration and other professional services delivery type

TYPE	DEFINITION	
SYSTEMS INTEGRATION AND OTHER PROFESSIONAL SERVICES	SYSTEMS INTEGRATION	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: • 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 multi-vendor components into a full stack solution (for example for open RAN implementations) • project management services. Services related to third-party products (not owned by the supplier) are included in this systems integration sub-category.
	BUSINESS CONSULTING	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.

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

Figure 18c: 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).

Contents

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).

We are experts in the telecoms, media and technology sector

Strategy

Corporate growth strategy

Business unit strategy

Infrastructure strategy

Transformation

Business transformation

Digitalisation

Operational excellence

Data, BI, steering and insights

Change and programme management

Sustainability

Transaction support

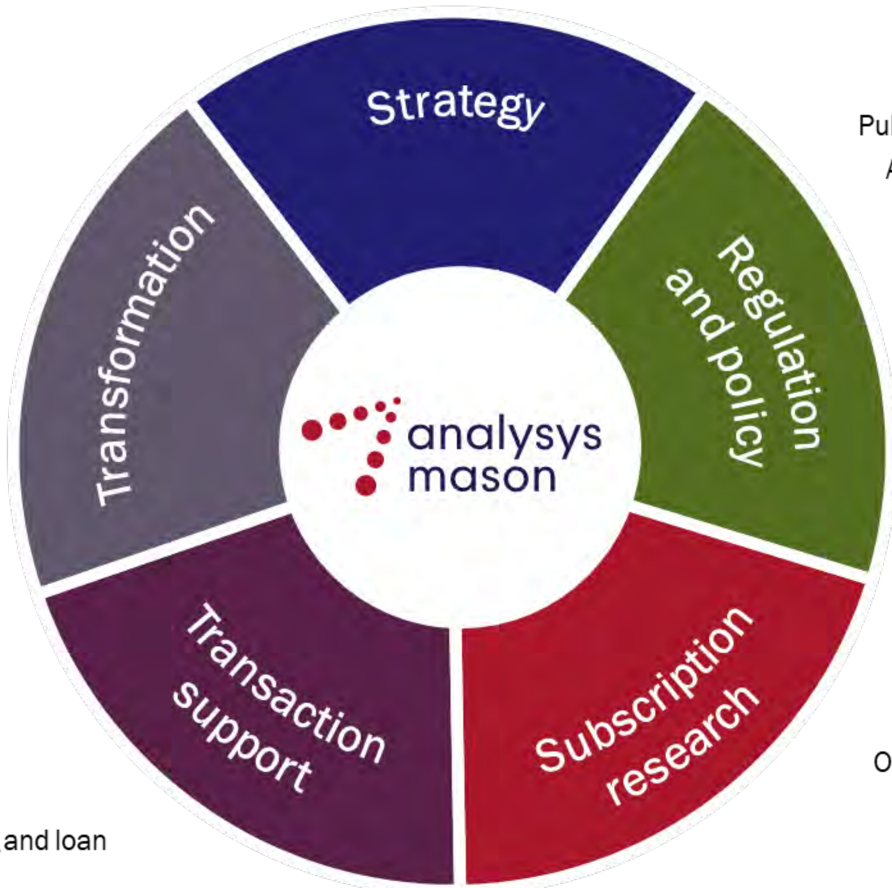
Commercial due diligence and market review

Technical due diligence

Post-merger integration

Periodical business monitoring and loan technical advisory

Opportunity scouting and pre-deal support



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Regulation and policy

Network and platform

Public sector broadband intervention

Accelerating digital transformation of society

Price controls and cost modelling

Regulatory accounting

Regulatory benchmarking and analysis

Spectrum management and policy

Expert witness and litigation support

Postal regulation and policy

Subscription research

DataHub and Regional Markets

Consumer Services

Operator Business Services and IoT

Applications

SMB IT Channels and Forecasts

Cloud

Networks

Our research programmes

Consumer Services programmes
- Fixed Broadband Services
- Mobile Services
- Fixed–Mobile Convergence
- Smart Devices
- Future Comms
- Video, Gaming and Entertainment
- Digital Services

Networks programmes
- Next-Generation Wireless Networks
- Wireless Infrastructure Strategies
- Fibre Infrastructure Strategies
- Operator Investment Strategies

Applications programmes
- Network Automation and Orchestration
- Customer Engagement
- Monetisation Platforms
- Digital Experience
- Automated Assurance
- Service Design and Orchestration

Cloud programmes
- Cloud Infrastructure Strategies
- Data, AI and Development Platforms
- Edge and Media Platforms

Operator Business Services and IoT programmes
- Large Enterprise Strategies
- SME Strategies
- IoT and M2M Services
- Private Networks

SMB IT Channels and Forecasts programmes
- Cyber Security

Regional Markets programmes
- Global Telecoms Data
- Americas
- Asia–Pacific
- Middle East and Africa
- European Core Forecasts
- European Telecoms Market Matrix
- European Country Reports

DataHub
- ~2800 forecast and 280+ historical metrics
- Regional results and worldwide totals
- Operator historical data

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Our areas of expertise

Strategy

Corporate growth strategy

Business unit strategy

Infrastructure strategy

Regulation and policy

Network and platform

Public sector broadband intervention

Accelerating digital transformation of society

Price controls and cost modelling

Regulatory accounting

Regulatory benchmarking and analysis

Spectrum management and policy

Expert witness and litigation support

Postal regulation and policy

Transaction support

Commercial due diligence and market review

Technical due diligence

Post-merger integration

Periodical business monitoring and loan technical advisory

Opportunity scouting and pre-deal support

Transformation

Business transformation

Digitalisation

Operational excellence

Data, BI, steering and insights

Change and programme management

Sustainability

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