

RESEARCH STRATEGY REPORT

IoT MONETISATION PLATFORMS: AN INCREASING NUMBER OF USE CASES IS ENCOURAGING CSP INVESTMENT

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analysismason.com



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Executive summary

As the IoT value chain continues to expand, communications service providers (CSPs) need to significantly improve their ability to effectively monetise IoT use cases – either by extending their current systems or by deploying new stacks.

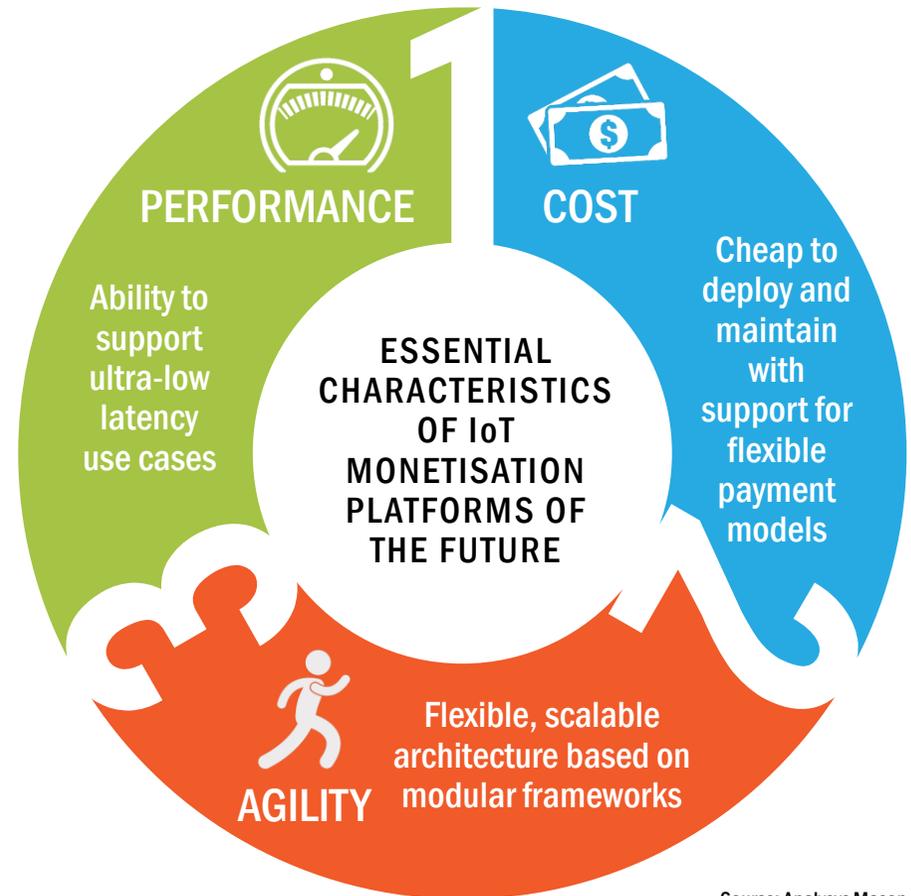
CSPs want to improve their IoT monetisation capabilities and are investing in solutions accordingly. However, most CSPs do not want to pay large, upfront costs for their IoT systems; instead, they favour low-cost, pay-as-you-grow approaches. Key drivers include:

- increasing demand for low-latency IoT use cases, which require real-time charging systems
- low-margin business models, which rely on CSPs owning low-cost support platforms
- the importance of seamless partner onboarding to develop thriving, services-based ecosystems.

Key recommendations

- CSPs should consider investing in new stacks, especially for the effective monetisation low-latency IoT use cases.
- All vendors should offer CSPs flexible deployment and revenue models.
- Traditional vendors should prepare for increased competition as enterprise vendors increasingly build relationships with CSPs.

Figure 1: Essential characteristics of IoT monetisation platforms of the future



Source: Analysys Mason

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The IoT value chain is continuing to expand and CSPs are well-placed to take advantage of the different IoT industry verticals/use cases

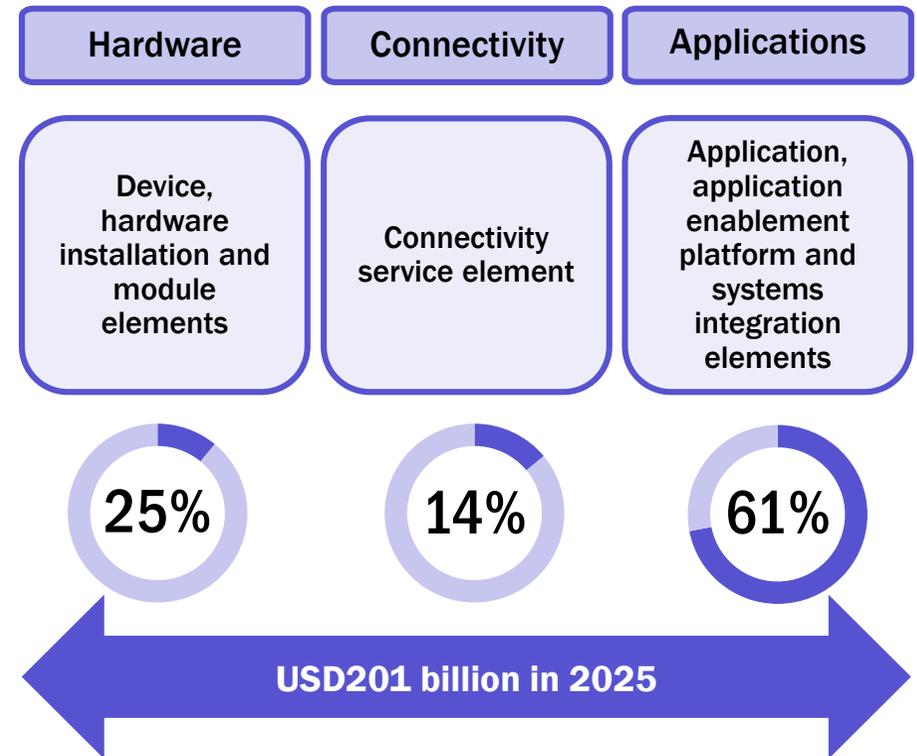
Total worldwide revenue from the IoT value chain (which includes hardware, connectivity and applications) will grow at a CAGR of 18% between 2016 and 2025, reaching nearly USD201 billion. According to Analysys Mason's forecasts for mobile IoT and LPWA connections:

- mobile IoT connections will grow from 317 million in 2016 to 1.3 billion in 2025
- LPWA connections will grow from 64 million in 2016 to 3.4 billion in 2025.

Average connectivity revenue per connection is minimal, despite significant growth in the number of connections. CSPs and other players in the IoT value chain are therefore seeking to generate incremental revenue by offering other components of the value chain, including hardware, devices and applications. Participation in parts of the IoT value chain beyond connectivity carries more risk, but also generates higher revenue and, typically, higher margins.

Consequently, CSPs increasingly want to invest in new support systems that will enable them to offer – and effectively monetise – new IoT services.

Figure 2: Percentage of revenue from each main component of the IoT value chain, worldwide, 2025¹



Source: Analysys Mason

¹ For further information, see Analysys Mason's *IoT value chain revenue: worldwide trends and forecasts 2016–2025*. Available at: www.analysismason.com/iot-value-chain-feb2017.

For most CSPs, deploying an entirely new stack may be the best approach for the effective monetisation of IoT use cases

From a systems perspective, a key area of concern for CSPs that want to provide support for IoT use cases is choosing an effective mechanism to monetise these new use cases efficiently.

Most CSPs have one of the following two options for supporting the monetisation of IoT use cases.

- Extend existing platforms.
- Deploy new stacks.

While extending existing platforms may appear to be a cheaper and faster option, this approach can, in the long term, become complex and expensive to maintain. CSPs should instead embrace all-new monetisation platforms for IoT specific use cases. Key reasons for taking this approach include the following.

1. Cost per transaction. CSPs may be able to rely on existing monetisation platforms to support IoT use cases for testing purposes, or for niche use cases that do not generate substantial traffic, but existing platforms will not be able to cope with large-scale traffic for popular IoT use cases such as smart cities or shopping and retail. Furthermore, extending these platforms to support high-volume IoT traffic will be highly inefficient because the cost per transaction will be significantly higher than what is considered by CSPs to be affordable, given the thin margins associated with IoT use cases.

2. Separate revenue management for enterprise use cases. Most CSPs have separate monetisation platforms for their consumer and enterprise businesses. Enterprise-focused monetisation systems are mostly archaic and do not support modern capabilities such as real-time charging or complex account hierarchies. A significant proportion of emerging IoT opportunities lie within the enterprise segment, and therefore CSPs will not be able to repurpose existing enterprise systems for IoT.

3. Ongoing digital transformation. Many CSPs are reviewing the utility of their existing legacy platforms as part of their digital transformation strategy, with a view to embracing all-new architecture frameworks. It would be disruptive to CSPs' ongoing operations to add support for new cases such as IoT on to existing legacy platforms, which may themselves be replaced in the short to medium term.

4. Scalability. Depending on the type of use case, IoT applications can sometimes generate high-volume traffic, either as event records or signalling messages, which can overwhelm support solutions. This makes it essential for CSPs to be able to scale their IoT support infrastructure dynamically on demand to ensure continuity of services. This is only possible on cloud-based systems.

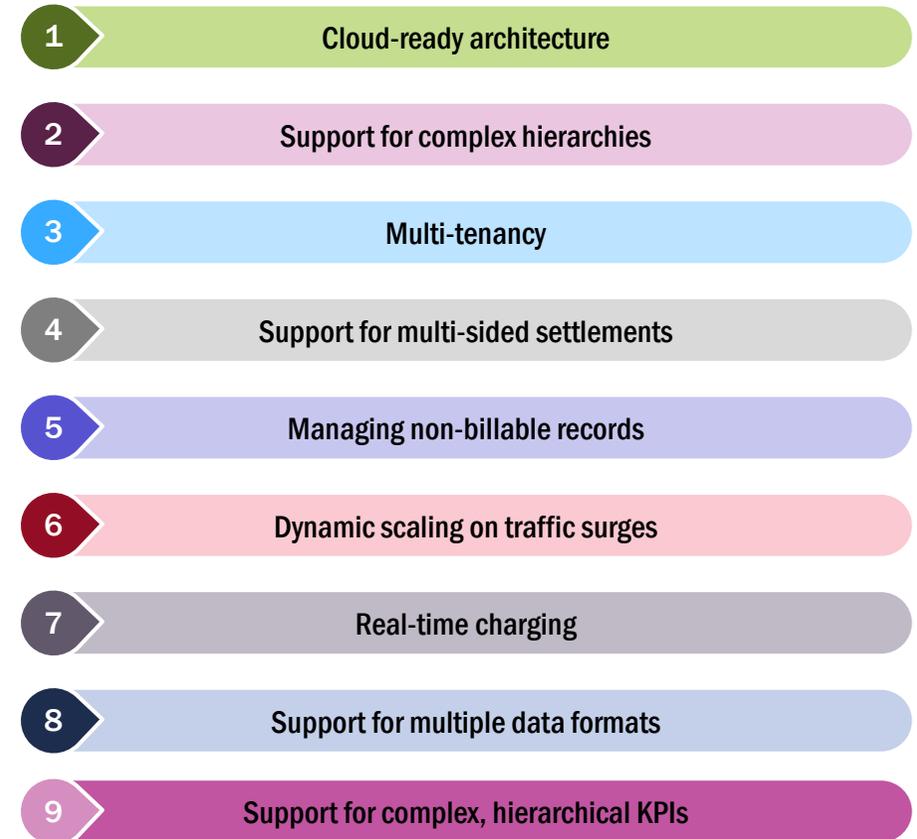
As the complexity of IoT use cases grows, CSPs are increasingly focusing on the capabilities of vendors' monetisation solutions

CSPs are actively considering different IoT offerings in the market, driven both by a growing confidence in the benefits of investing in IoT business cases, as well as impending 5G commercial deployments. CSPs are primarily focused on highly efficient, low-footprint, low-cost IoT monetisation solutions that can be deployed swiftly and that adequately support a low margin business.

Traditional billing and charging systems have a common set of system functions that can support a significant number of use cases. However, the use cases for IoT monetisation are diverse, disaggregated and not yet fully defined. As a result, this requires IoT monetisation platforms to be extremely agile, extendible and scalable, in addition to being cost efficient to support and maintenance.

Furthermore, it is imperative that these IoT support systems can be deployed without significant upfront investment on an opex model because most of the business cases are still evolving and yet to be proven. This ideally means employing a cloud-ready solution that can be rapidly deployed and offers short time to launch for new services. In addition, these systems must also be capable of dealing with non-billable records to enable analytical applications to drive detailed insights. This can lead to surges in demand for processing power and online storage, which the cloud-based system should be able to dynamically manage.

Figure 3: Some of the key features that CSPs expect in IoT monetisation platforms



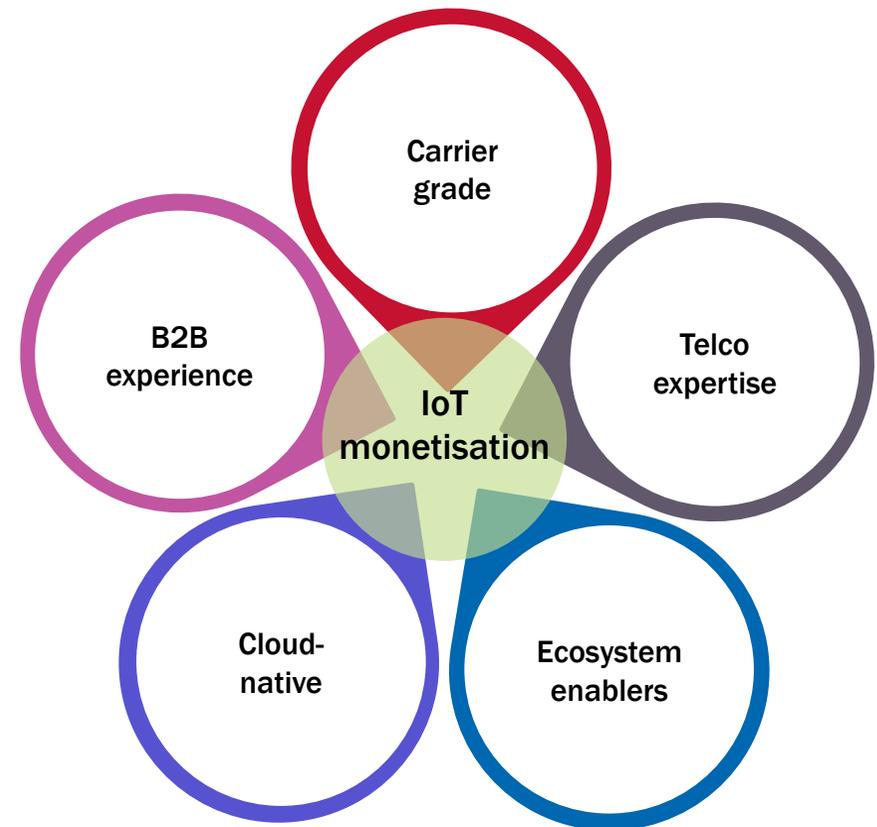
Source: Analysys Mason

CSPs should consider five main factors when selecting vendor partners for their IoT monetisation platforms

There are numerous IoT monetisation solutions available in the market currently, although a large portion of these are focused on selling directly to the enterprise market. For CSPs, the key criteria for vendor selection include the following.

- **Carrier grade reliability.** This refers to the solution's reliability, which for CSPs usually means at least five nines of availability. Internet-grade solutions tend to be four nines or under.
- **Experience working with CSPs.** Vendors that have deployed solutions at CSPs, or partnered with other providers, have a key advantage over other vendors (such as those serving non-telco enterprises) because they are better prepared for long sales cycles and for the varied CSP system integrations that may be required.
- **B2B/enterprise expertise is an advantage.** Enterprise and B2B2X are the main use cases driving CSP investment in IoT. Vendors that have cross-industry experience providing IoT support systems to other verticals will have the advantage.
- **Cloud-native portfolio.** From a platform perspective, it is important that vendors' solutions are cloud-native compliant or have a clear road map for becoming compliant because CSPs are expected to widely embrace these architecture models.
- **Active ecosystem of partners/enablers.** Effective IoT monetisation requires the monetisation platform to seamlessly link to other solutions in the IoT ecosystem and must enable an ecosystem of partner service providers to plug into CSPs' platforms.

Figure 4: The primary considerations for CSPs when selecting IoT monetisation vendors.



Source: Analysys Mason

Key recommendations

1

Communications service providers should consider deploying all-new stacks for IoT monetisation rather than extending existing systems.

Although it may be easier in the short term to address IoT use cases by deploying adjunct solutions or by extending existing solutions, it will be more difficult and expensive in the long term to scale these systems when IoT usage increases. Therefore, CSPs should deploy IoT-specific stacks because this strategy provides them with the necessary agility and scalability to support future use cases.

2

Vendors should offer CSPs flexible deployment and revenue models that can enable the deployment of IoT monetisation platforms with limited upfront costs.

There is growing momentum in the market as CSPs firm up their plans to invest in supporting IoT monetisation systems. The requirements of monetisation systems for traditional services are different to those for IoT services and to support IoT services, CSPs will need to prioritise low cost of ownership and flexible deployment models.

3

Traditional vendors should prepare for increased competition as enterprise vendors increasingly enter into contracts with CSPs.

Although incumbent vendors are well-placed to provide IoT monetisation platforms, CSPs are also considering entering into contracts with vendors that do not have telecoms experience, but do have experience in the enterprise market. This increases pressure on traditional vendors to more-effectively articulate their positioning and value.

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Amdocs

www.amdocs.com

PRODUCTS AND SERVICES

- Amdocs' IoT portfolio for CSPs includes its IoT Acceleration Pack (billing), IoT Services Enablement, Connected Home and Digital Esim Manager.
- The IoT Acceleration Pack is an IoT billing add-on, enabling CSPs to leverage their existing BSS assets for IoT use cases.
- The IoT services enablement exposes CSPs' assets and offers a single point of integration to an ecosystem of IoT original equipment manufacturers.
- The Connected Home offering is an end-to-end hardware, software and services offering for all smart-home use cases.
- The Digital eSIM manager is a SaaS solution that offers a single point of integration for CSPs to seamlessly support and manage eSIMs for all devices and eSIM vendors.

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

**Founded
1982**

Key relationships

- AT&T
- Tyco
- Gemalto

**Chesterfield, MO
(HQ)**



ANALYSIS

- Amdocs has over 15 live IoT deployments worldwide and is building momentum around its IoT portfolio.
- The company is focusing on both industrial IoT applications and consumer IoT, a strategy which aligns well with its offering and installed base.
- The company acknowledges the slow evolution of IoT use cases and has a long-term commitment to this domain.
- Amdocs is also focusing on building partnerships with device and SIM manufacturers that will further its IoT reach.
- The company is pursuing an opex-led, low upfront cost pricing strategy for its IoT portfolio, which is representative of most vendors in the industry.

STRATEGY

Territory	The company will prioritise existing CSP customers even as it pursues new opportunities worldwide.
Products	The IoT modules can be integrated with Amdocs' CES or Optima solutions or provided as a standalone offering.
Channels	The company will leverage existing customer contacts alongside improving engagement with device/SIM manufacturers and SIs.

Aria Systems

www.ariasystems.com

Founded
2002

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

**Key
relationships**

- Deloitte
- Salesforce
- Matrixx

**San Francisco
(HQ)**



PRODUCTS AND SERVICES

- Aria's cloud billing and monetisation platform is a fully cloud-hosted solution for enterprises and telecoms operators that includes support for billing, provisioning and servicing of products.
- For IoT use cases, the Aria platform offers support for complex hierarchies and subscription linkages at multiple levels. It also supports devices independent of accounts and is designed to record and process non-billable IoT records as well.
- The company's focus is to provide end-to-end revenue management for enterprises and telcos that support both B2B and B2C customers.
- Aria's platform offers integration with a broader ecosystem of platforms including ERP, CRM, ecommerce and taxation.

ANALYSIS

- As a company with a reasonably sized telco business, Aria has an advantage over other similar cloud-based billing vendors without telco expertise.
- The company is also seeing increasing success against traditional telco vendors, especially for emerging use cases, thanks to its agile, small footprint, fully cloud-based model.
- IoT monetisation use cases are a sweet spot for the company because telecoms operators appear keen to engage with purely cloud-based billing vendors that can offer a rapid time to market for new product launches.

STRATEGY

Territory	The company is focused on large enterprises, including CSPs, in developed markets.
Products	Aria will leverage its cross-industry expertise and invest in its platform to increase coverage of IoT, OTT and use-cases beyond telco vertical.
Channels	Strong focus on partnering with service providers with expertise in other verticals to expand its IoT portfolio coverage.

CSG

www.csgi.com

Founded
1994

Key relationships

- Accenture
- Capgemini
- IBM

Englewood, CO
(HQ)



CSG International is a major provider of outsourced revenue management and customer care to CSPs.

PRODUCTS AND SERVICES

- CSG's 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.
- CSG Ascendon is a cloud-based monetisation and engagement platform for digital services that supports multiple business lines.
- CSG has mainly positioned its Ascendon platform to address the IoT opportunity. The Ascendon platform leverages CSG's foundational technology.
- The Ascendon platform is deployed as a SaaS-based offering in the AWS cloud.

ANALYSIS

- CSG has an increasing focus to expand beyond its enterprise heritage to address the high-growth markets of IoT/M2M and cloud services.
- CSG has established a partnership with Arrow Electronics to further drive their expansion into IoT monetisation services.
- CSG's ability to provide managed services has still to be fully realised outside North America (NA).
- CSG has a well-established relationship with Tier-1 cable companies in NA. The company is working to expand its managed services offerings outside NA with agreements and is seeing increasing traction in Africa and Australia.

STRATEGY

Territory	CSG continues to focus on expanding its business into emerging markets in Asia-Pacific and Latin America.
Products	Cloud-hosted service delivery is one area of focus, and CSG intends to shift more of its business towards SaaS and managed services.
Channels	CSG is diversifying the vertical markets it serves to include home security, transportation, healthcare, utilities and government segments.

Ericsson

www.ericsson.com

PRODUCTS AND SERVICES

- Ericsson's IoT Accelerator Platform is an end-to-end IoT stack for enterprises and service providers. The platform is deployed on a SaaS model.
- Key functionality of the IoT Accelerator platform include connectivity management, device and data management, billing & settlement, orchestration and automation for analytics processing and IoT marketplace.
- A key feature on the platform is Ericsson's IoT monetization engine, a cloud-based solution built on meta-data architecture enabling agile monetization and settlement for the entire IoT ecosystem.

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

Founded
1876

Key relationships

- Accenture
- TCS
- Capgemini

Stockholm (HQ)



ANALYSIS

- Ericsson is a leading player in the IoT platforms space with its IoT Accelerator Platform and counts several tier-1 CSPs as customers.
- The company is pursuing cloud-based delivery XaaS delivery model for its IoT platforms that has low upfront investment for CSPs.
- As an increasing number of CSPs look to deploying new IoT specific stacks, Ericsson is well positioned to take advantage of the opportunity.

STRATEGY

Territory	Ericsson will focus on selling its IoT portfolio to existing customers and tier-1 CSPs in both emerging and developed regions.
Products	Ericsson is focussed on the end-to-end nature of its offering. All solutions will be offered on a SaaS model.
Channels	Ericsson intends to cross-sell and upsell to its established large CSP customers in order to develop deeper relationships with them.

MDS

www.mdsglobal.com

**Founded
1997**

**MDS is a UK-based
provider of BSS-as-a-
Service for the CSP
market.**

**Key
relationships**

- Openet
- NTT Data
- Tech Mahindra

**Warrington, UK
(HQ)**



PRODUCTS AND SERVICES

- MDS's main offering is its Customer Management Platform (CMP). This platform is the underlying foundation for all the telco-specific segments that the company serves which include IoT, B2B and MVNO.
- From an IoT perspective, the CMP platform is focussed on agility and serving complex IoT revenue chains through dynamic settlement models.
- MDS's IoT monetisation-as-a-service is a complete managed offering model that provides support for complex B2B2X use cases, embedded revenue and service assurance and integration with leading CRM, ERP and IoT platforms.

ANALYSIS

- MDS has been providing CSP support systems in Western Europe over the past 15 years and counts multiple Tier 1 CSPs as customers. Mobile service providers in Western Europe account for the majority share of MDS's current revenue.
- MDS has relied on managed services as its primary delivery model, which is well suited to IoT service providers. MDS has developed a well-established managed services support framework based on its experience working with Tier 1 CSP customers.
- MDS's IoT business grew out of its expertise in offering B2B support systems for telecoms operators.

STRATEGY

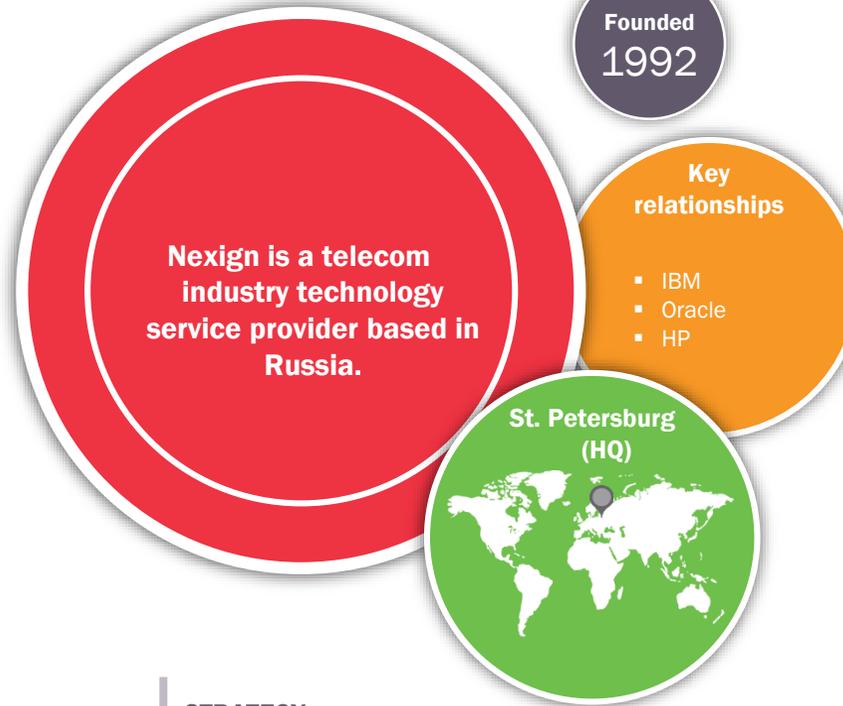
Territory	MDS is expanding into Asia-Pacific and Latin America and will rely on partnerships to expand into emerging regions.
Products	MDS continues to invest in expanding its portfolio of offerings and strengthen its managed services capabilities.
Channels	To expand channel coverage, MDS will partner with SIs, VNO consultants and vendors with complementary BSS solutions.

Nexign

www.nexign-systems.com

PRODUCTS AND SERVICES

- Nexign provides BSS solutions to telecoms operators and has a strong presence in Russia and CIS region.
- Nexign's IoT portfolio of offerings includes Application Enablement Platform (AEP) and Connectivity Management Platform (CMP).
- The AEP includes device management and data management modules in addition to analytics and machine learning integrations.
- The CMP includes billing and charging modules, subscription management and diagnostics tools and manages network interactions.
- The company also offers managed services and professional services for its deployments.



**Founded
1992**

ANALYSIS

- Nexign, by virtue of being one of the early providers of telecoms software solutions in Russia, has a dominant position in the region.
- The company is seeing growing traction for its IoT portfolio of offerings especially in the CIS region and is in the process of expanding into Asia and the Middle East and Africa (MEA).
- Nexign has a strong focus on partnering with service providers from other verticals and industries in order to offer CSPs cross-domain expertise in IoT monetisation.
- The company is positioning itself as a value leader that can provide IoT capabilities comparable to other leading vendors at a lower total cost of ownership (TCO).

STRATEGY

Territory	Nexign has a strong presence in the Commonwealth of Independent States (CIS) region. It is now focusing on expanding to Asia and MEA.
Products	Nexign will continue to invest in strengthening its IoT portfolio organically and through partners.
Channels	It has a strong focus on partnering with service providers with expertise in other verticals to expand its IoT portfolio coverage.

Nokia

www.nokia.com

PRODUCTS AND SERVICES

- Nokia IMPACT is a horizontal IoT platform for device onboarding, device management, data collection, event processing, subscription management, data contextualisation, analytics and application enablement. Nokia Smart Plan Suite integrates with IMPACT and provides support to monetise IoT use cases.
- Nokia WING, launched in early 2017, is a managed service for CSPs to deliver IoT services globally to multinational enterprises, all white-labelled under the CSP brand.
- Nokia's IoT Community is an ecosystem of nearly 200 member companies that collaborate on solution concepts, end-to-end prototypes, business models, and market trials.

**Nokia is a
 leading provider of
 telecoms software and
 services.**

**Founded
 1865**

Key relationships

- Accenture
- HPE

Espoo (HQ)



ANALYSIS

- Nokia has growing ambitions for its IoT portfolio. The company already offers an end-to-end solution for IoT, from devices to connectivity to platform to applications to security and services.
- Although CSPs remain its primary focus, the company is also expected to pursue IoT deals with non-telco customers.
- In IoT, Nokia's focus is on these key verticals: utilities, public safety, **health, smart cities, and automotive**. Through its WING offering, Nokia will target CSPs and MVNOs that serve large enterprises.
- Nokia has an extensive sales channels and a wide CSP customer base that it will leverage to upsell and cross-sell its IoT portfolio.

STRATEGY

Territory	Nokia has worldwide coverage, but its initial focus will be on existing CSP customers.
Products	The company will continue to invest in its IMPACT and WING offerings.
Channels	Nokia will continue to target Tier 1 and Tier 2 CSPs, enterprises and governments. Its portfolio includes opportunities to upsell and cross-sell.

Sterlite Tech

www.sterlitetech.com

Founded
 1995

Sterlite Tech is a vendor of telecoms products and services and is majority owned by Vedanta Limited, a publicly listed conglomerate with interests in multiple industries.

Key relationships

- Ericsson
- SAP

Pune, India (HQ)



PRODUCTS AND SERVICES

- The Smart and Converged IoT Platform (SCIP) is Sterlite's IoT platform.
- The solution is deployed on top of the network layer and can support multiple use cases including retail, transport, security or industrial.
- From a product perspective, the company is focusing on extensive automation, real-time network intelligence and integration with third-party service providers.

ANALYSIS

- Sterlite is positioning itself for the growing IoT opportunities from its emerging market customers, where existing systems cannot provide support for IoT use cases.
- The company is seeing increasing interest in its IoT portfolio of offerings from smart cities, communications, transport and utilities-related use cases.
- Sterlite Tech has a number of reference CSP customers across multiple regions. This provides it with a good opportunity to upsell and cross-sell its portfolio of offerings.
- By virtue of being backed by a large conglomerate, Sterlite Tech has access to the resources necessary for becoming a leading provider of IoT services in emerging markets.

STRATEGY

Territory	Sterlite Tech is currently focusing on emerging markets with its IoT portfolio of offerings
Products	It has a strong focus on automation, network intelligence and integration with partner ecosystems.
Channels	Sterlite continues to drive direct engagement while also partnering with others as appropriate, especially in new verticals.

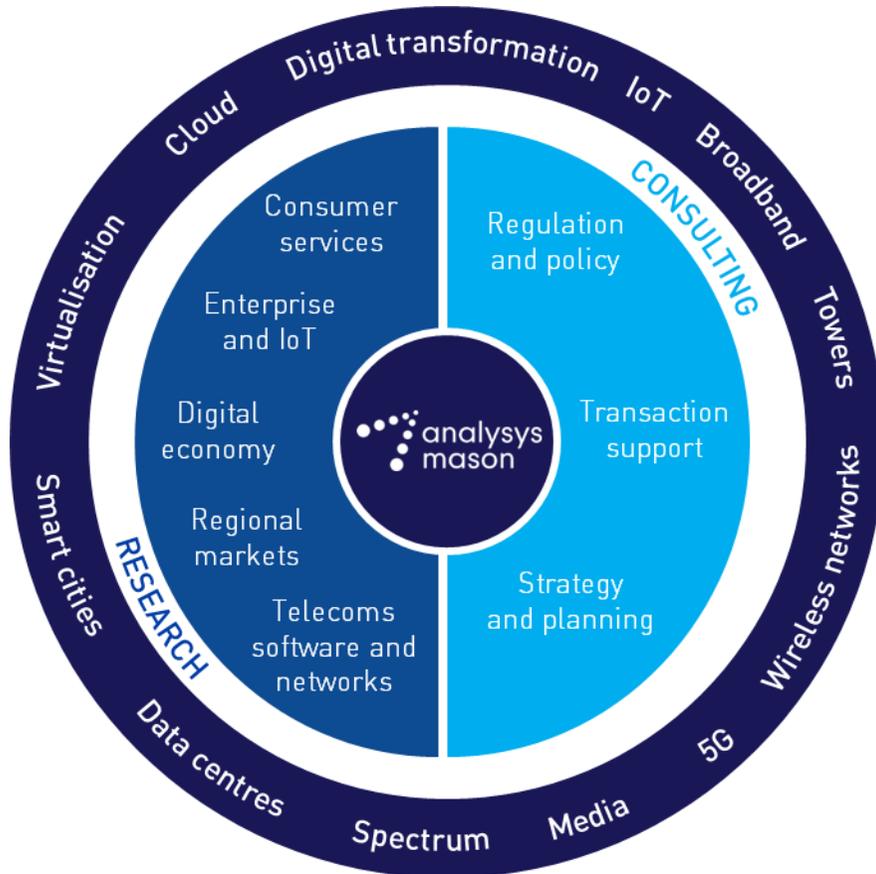
About the author



John Abraham (Principal Analyst) is part of the BSS practice in Analysys Mason's Telecoms Software and Networks Research team. He leads our Monetisation Platforms programme and our research into digital experience for monetisation platforms, as part of the Digital Experience programme. John also contributes to our research into cloud-native architecture models, which is covered as part of the Software-Controlled Networking programme. John has been part of the telecoms industry since 2006, and joined Analysys Mason in early 2012. He has worked on a range of telco projects for operators in Africa, Europe, India and the Middle East. Before joining Analysys Mason, he worked for several years for a BSS vendor and before that for Dell Inc in India. John holds a bachelor's degree in computer science from Anna University (India) and an MBA from Bradford University School of Management (UK).

Analysys Mason's consulting and research are uniquely positioned

Analysys Mason's consulting services and research portfolio



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 - Network Investment Strategies
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 - AI and Analytics



- Digital economy programmes**
 - Digital Economy Strategies
 - Future Comms
 - Enterprise and IoT programmes**
 - Large Enterprise Voice and Data Connectivity
 - Large Enterprise Emerging Service Opportunities
 - SME Strategies
 - IoT and M2M Services
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 - Americas
 - Asia-Pacific
 - Middle East and Africa
 - European Core Forecasts
 - European Telecoms Market Matrix
 - European Country Reports
- DataHub**
- Data covering +80 countries and +500 operators
 - +2300 forecast and +250 historical metrics
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 - Operator historical data
 - Compare markets and operators
 - Financial values in USD, EUR or local currency
 - Export data to Excel and save searches

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- Net cost of universal service
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