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THE FUTURE OF TELCO MONETISATION SYSTEMS: AN EVOLUTIONARY REVOLUTION

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1. Executive summary

Digital transformation is driving broad changes within telecoms operations as communications service providers (CSPs) continue to evolve into digital service providers (DSPs). CSPs have a growing number of opportunities enabled by the digital economy to increase customer engagement and revenue, but they are also facing greater competition and flat or declining margins. CSPs are responding to these trends by increasing their focus on developing capabilities that will allow them to swiftly embrace – and effectively monetise – emerging opportunities. CSPs are therefore adopting a multi-dimensional approach to transform their underlying monetisation platforms in order to improve agility and time to market, as well as to reduce costs.

Analysys Mason surveyed 100 CSPs and interviewed over 30 CSPs across all tiers and in emerging (primarily countries in Africa, Asia–Pacific and Latin America) and developed markets (primarily countries in North America, Europe and some parts of Asia–Pacific) in order to understand CSPs' strategic plans for the monetisation systems of the future. In both the surveys and the interviews, CSPs acknowledged the growing number of services that they expect to monetise over the next 5 years. However, most CSPs also recognise the urgent need to transform their monetisation stacks, mainly to support new use case and also to control the high cost of supporting existing legacy systems.
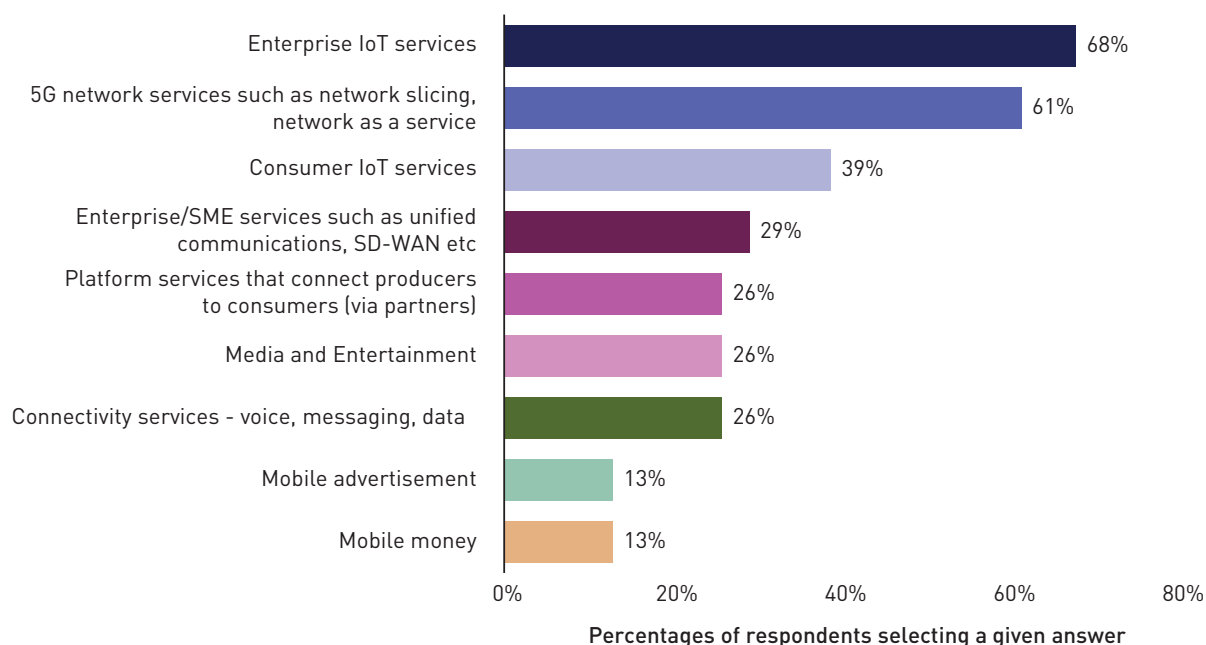
Figure 1:   Key services that CSPs expect will drive new revenue in the next 5 years

CSPs anticipate the growing adoption of 5G and IoT and the broader emphasis on digital transformation will accelerate their plans to modernise monetisation platforms. Our research findings also highlight that the primary impediments to CSPs' ambitions for transforming their monetisation systems are the high

cost of transformation, the complexity of existing systems and rigid organisational structures. This white paper discusses the main findings from our survey and interviews with CSPs and recommends important actions for them to consider.

2. Evolving monetisation systems require progressive transformation without disruption

CSPs that are in the process of transforming into DSPs to remain competitive in a rapidly evolving market must determine how best to make this transition in a cost-effective manner without disrupting ongoing operations. This is especially the case for monetisation systems, where the support and maintenance of existing legacy frameworks and disparate silos account for most of the overall spending on these systems. At the same time, the legacy nature of these systems severely impedes the pace at which CSPs can support emerging use cases or extract value from the deployment of new software systems. Traditional systems were originally deployed as monolithic software applications and, as such, cannot fully support modern requirements such as new delivery models,

dynamic value chains, horizontal scalability, reusable modules, continuous integration/delivery and cloud-based deployment. Most CSPs recognise the need to adopt modern methods of application development, architecture frameworks and deployment models to transform their monetisation systems framework to support emerging use cases in a timely and cost-effective manner.

Analysys Mason's survey of 100 CSPs and interviews with over 30 CSPs across emerging and developed markets (see Figure 2) to better understand telco aspirations, reasoning and strategy in evolving their monetisation systems.
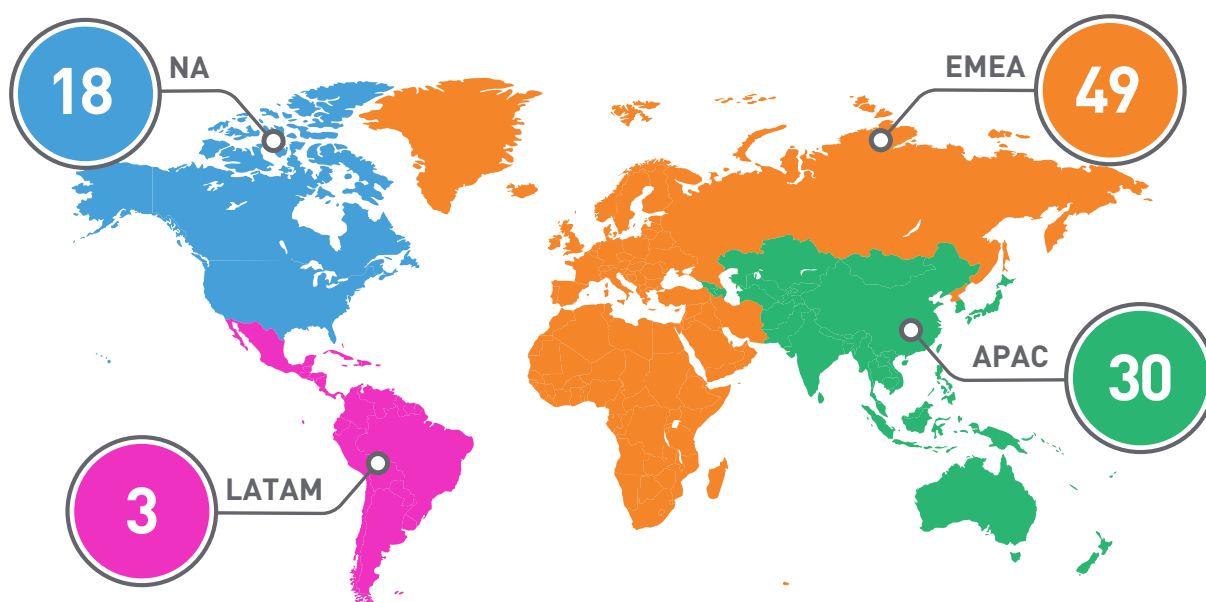
Figure 2:   Regional distribution of participants in Analysys Mason's CSP monetisation systems survey

2.1 New digital services are a key driver for change, but high cost of transformation continues to slow down progress

Figure 3 highlights the key factors that CSPs anticipate will drive change in their monetisation systems. Nearly half of the CSPs that we surveyed consider the increased demand for digital services (whether for enterprises (such as smart cities) or consumers (such as low latency gaming)) to be a major driver of evolving monetisation systems. The reduction of costs is also an important factor driving changes and therefore appeared near the top of the list of CSP responses, closely followed by

the arrival of 5G and the need to embrace cloud-native architecture.

Over a quarter of CSPs are aware that changes to their monetisation systems will be required to support new payment methods and the growing popularity of unlimited monthly plans. Interestingly, competitive pressure does not appear to have a substantial bearing on CSPs' plans for evolving monetisation systems.

Increased demand for enterprise digital services — 47%
Increased demand for digital consumer services — 41%
The need to reduce costs — 38%
New technologies (including 5G) / cloud-native architecture — 37%
The need to reduce time to market — 35%
Service bundling and personalisation — 30%
Unlimited monthly plans — 27%
The need to support new payment methods — 27%
Growing pressure from competition — 17%

Percentage of respondents selecting a given answer

Source: Analysys Mason

Figure 3:   Drivers of changes to CSPs' monetisation systems over the next 5 years

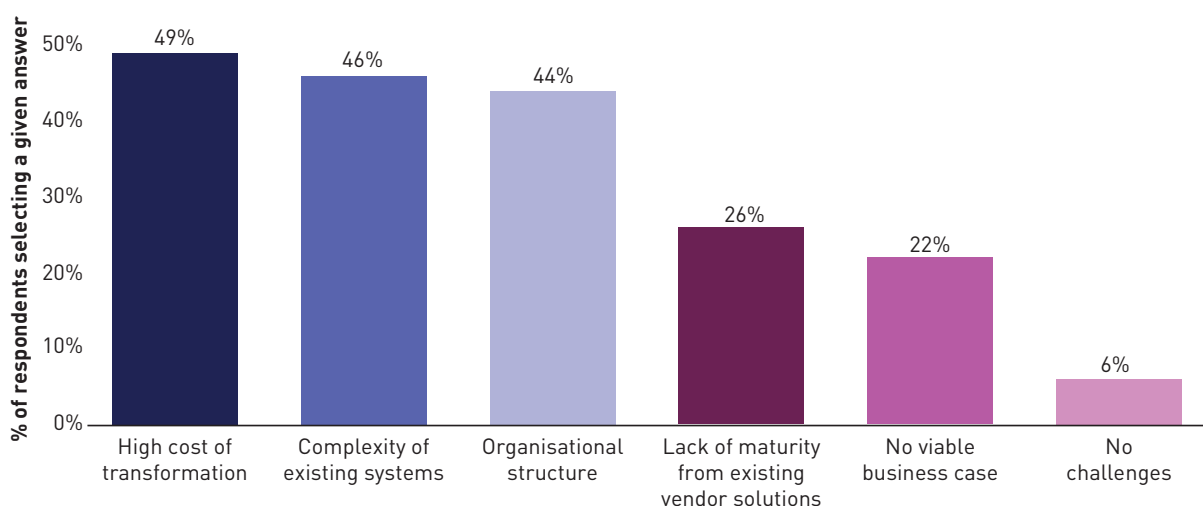Cost, the complexity of existing systems and rigid organisational structures are the three leading reasons why CSPs' progress in transforming their monetisation systems is being inhibited (see Figure 4). 91% of CSPs surveyed selected one or more of the 3 challenges. Although these factors do not represent new challenges, it is noteworthy that most CSPs are still burdened by these obstacles and that CSPs do not yet have a clear path for overcoming them.

The maturity of available vendor solutions was highlighted as a concern by around a quarter of the CSPs that participated in our research. Only a fifth of the CSPs surveyed identified the lack of clarity regarding new business cases as a factor that is slowing down the transformation of monetisation systems. Of the six CSPs that did not expect to encounter any challenges, four are large CSPs with a reasonably sized subscriber base.

% of respondents selecting a given answer

High cost of transformation — 49%
Complexity of existing systems — 46%
Organisational structure — 44%
Lack of maturity from existing vendor solutions — 26%
No viable business case — 22%
No challenges — 6%

Source: Analysys Mason

Figure 4:   Inhibitors to the evolution of monetisation systems over the next 5 years

3. Key trends in monetisation systems in emerging and developed markets

3.1 Billing and charging systems will be a critical part of future monetisation platforms; existing systems will need to evolve to support emerging use cases

There is strong consensus among the CSPs that we surveyed that billing and charging systems will play a critical role within the monetisation framework now and in the future. However, over 80% of CSPs plan to evolve their current monetisation systems to support emerging use cases, especially those driven by 5G, new digital services and flexible payment models.

A small number of CSPs (12%) hold the view that telco-specific charging systems will not be relevant in the future and will gradually be replaced by more-generic monetisation systems that are cheaper to run. A slightly higher number of CSPs (14%) have a similar view of telco billing systems and anticipate that traditional telecoms-specific billing systems will be replaced by generic billing systems that are simpler and cheaper.

"Billing systems that do not support the newer, smarter network elements will become obsolete." Tier 1&2 CSP, EMEA
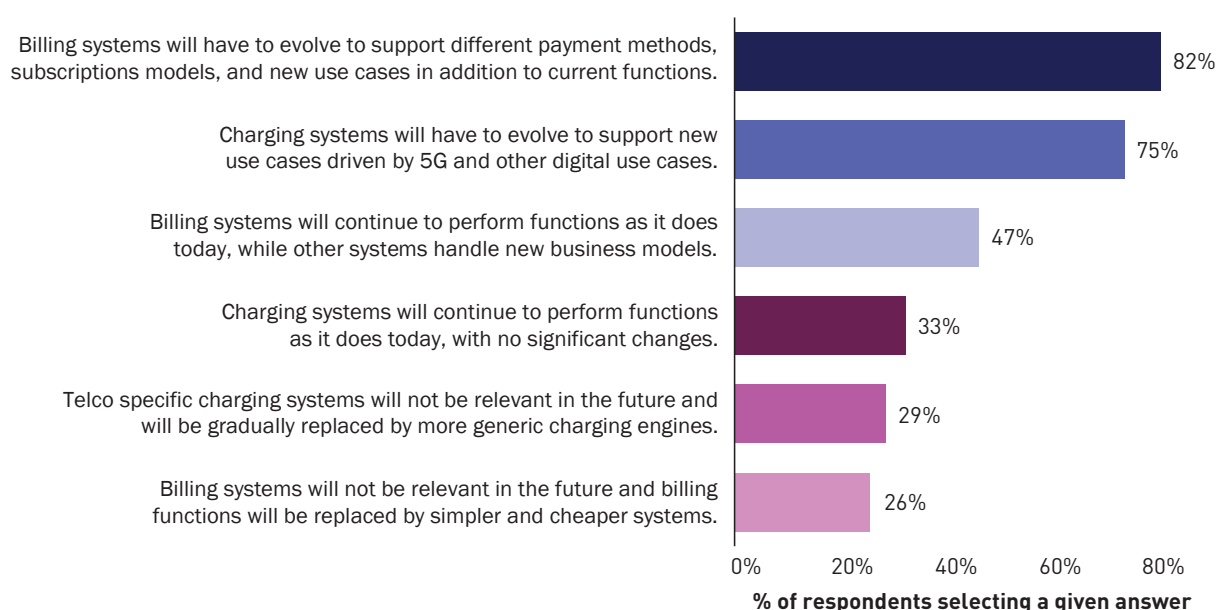
Source: Analysys Mason

Figure 5: CSPs' plans for billing and charging systems in the future

When it comes to the different models for rating customer services, CSPs acknowledge the importance of supporting a broad set of rating models. A data-speed-based rating model was listed as most important, followed by supporting multiple payment mechanisms and usage-based models. There is also growing recognition of modern rating models such as those

based on compute capacity, latency and API connections. Importantly, most respondents were doubtful that the growing popularity of unlimited monthly plans will drive CSPs towards more simplified billing and charging systems. In fact, CSPs broadly concurred on the necessity to evolve existing systems to support more complex use cases.

"It will be difficult for telecom operators to provide truly unlimited plans because of the load it may place on the infrastructure and the existing spectrum. Even though some services may move towards subscription-based models, there would be caveats in the plans on data speeds. Thus, such plans will effectively remain a metered proposition." Tier 1&2 CSP, NA
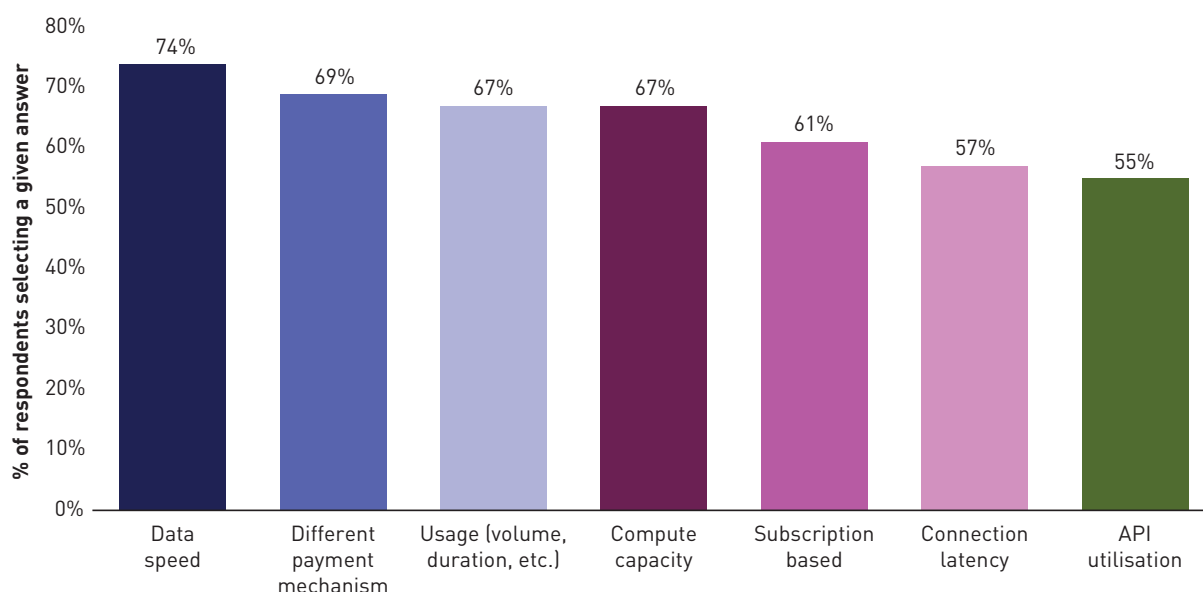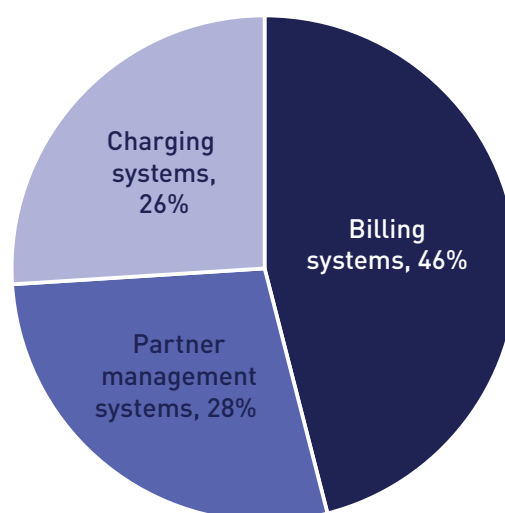
Source: Analysys Mason

Figure 6:   Rating models by importance to future monetisation systems

3.2 CSPs from emerging and developed markets have distinctive investment priorities and expected revenue drivers

Our research highlighted that globally, nearly half of surveyed CSPs (46%) associated billing systems with the highest investment priority (see Figure 7). CSPs in developed and emerging markets have different priorities when it comes to ongoing investment in their monetisation systems. For example, nearly 60% of CSPs from developed markets assigned the highest priority to billing systems investments, and charging systems were identified as receiving the least attention (see Figure 8). This reflects the highly complex billing systems in use in these regions, which are also expensive to maintain. In emerging regions, CSPs acknowledge that billing, charging and partner management systems need further investment because the priorities are more evenly split, with a slightly higher consideration for charging systems.

Source: Analysys Mason

Figure 7:   CSP investment priorities in monetisation platforms, worldwide
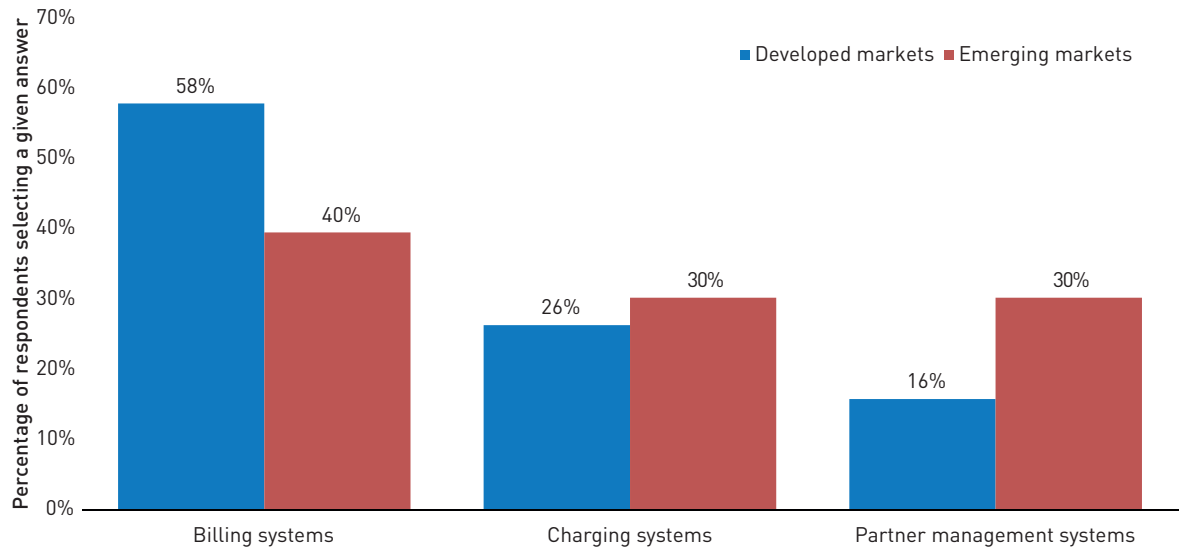
Source: Analysys Mason

Figure 8:   CSP investment priorities in monetisation platforms, worldwide

The priorities of developed and emerging markets are different when it comes to the features and capabilities that will be integral to the development of monetisation systems over the next 5 years. CSPs in developed markets classify cloud-native compliance and billing and invoicing as high priorities, while CSPs in emerging markets identify real-time charging and partner management as the most important features for the future. SaaS-based billing, although identified as least important in both regions, is still of substantial interest to CSPs, mainly for niche or emerging use cases. Also noteworthy is the growing interest in AI within monetisation systems, especially in emerging markets.
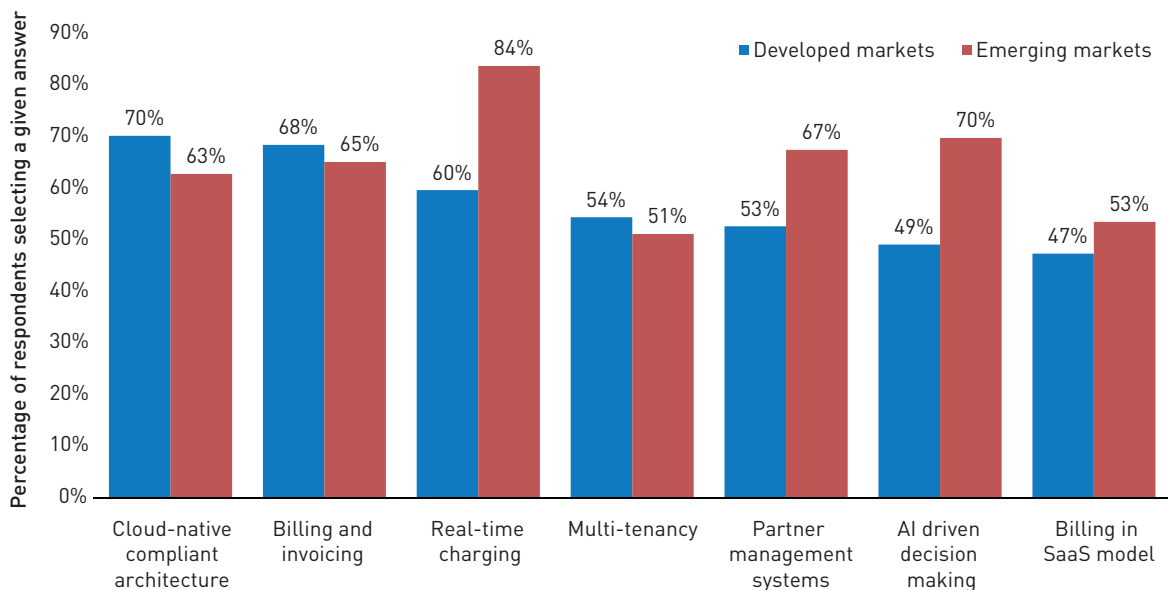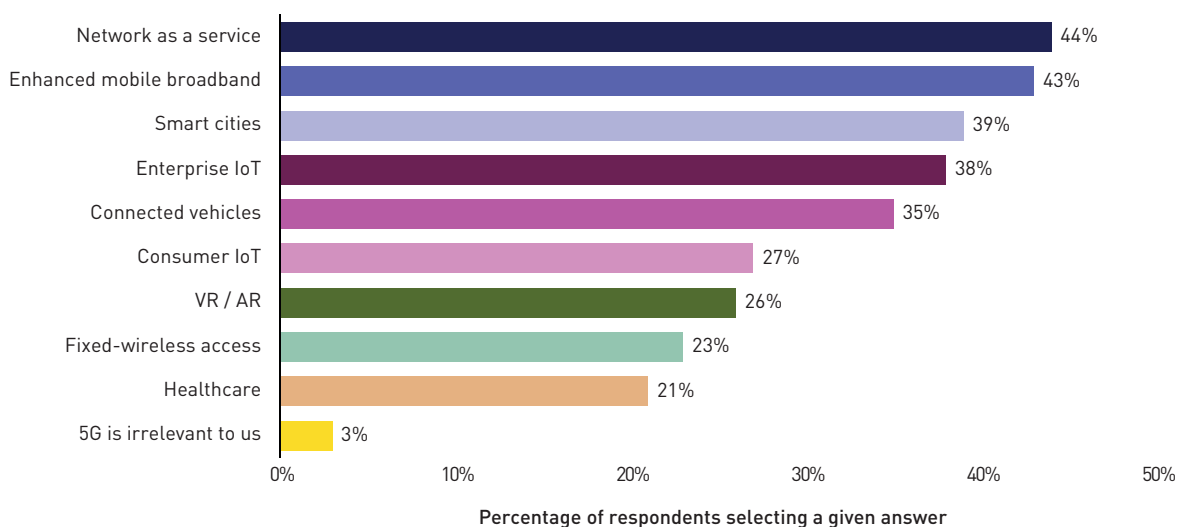

Source: Analysys Mason

Figure 9:   Important features and capabilities of monetisation systems as ranked by CSPs, developed and emerging markets

Network as a service and enhanced mobile broadband are the two leading 5G-driven use cases that CSPs worldwide expect to drive investment in monetisation systems (see Figure 10). CSPs in developed markets have a disproportionate influence on global trends, given that most CSPs in emerging markets lag behind in terms of the overall deployment of 5G infrastructure.

Figure 10: 5G use cases that CSPs worldwide anticipate will drive changes to monetisation systems

In line with global trends, CSPs in developed markets also expect network as a service and enhanced mobile broadband to be key drivers of change in monetisation systems (see Figure 11). CSPs in this region expect enterprise-focused use cases to be a more-significant reason for change. CSPs in emerging markets rank smart cities and enterprise IoT as key drivers of change in monetisation systems (see Figure 12). Overall, CSPs in emerging market lag behind CSPs in developed market in their initiative and intentions to adopt 5G.
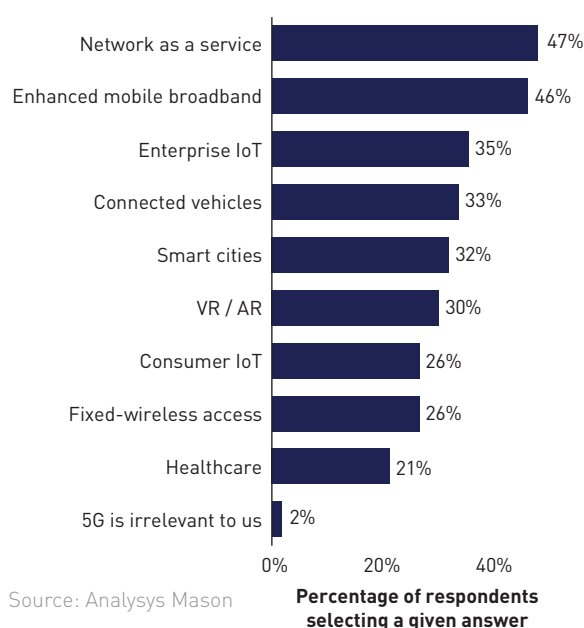
Figure 11: 5G use cases that CSPs in developed markets anticipate will drive changes to monetisation systems
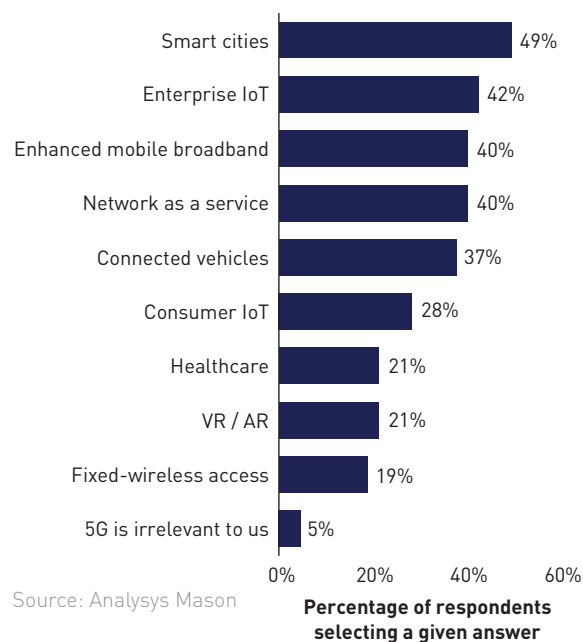
Figure 12: 5G use cases that CSPs in emerging markets anticipate will drive changes to monetisation systems

# 4. The monetisation systems of the future

Much of the investment made by CSPs in monetisation platforms is driven by the growing need to evolve existing systems in order to support emerging use cases. The ongoing and high cost of supporting legacy systems is also a key driver for many CSPs. Most CSPs anticipate that connectivity-based services will continue to be a key driver for service revenue growth, primarily because they expect all new services to be underpinned by robust connectivity. There is also a growing expectation that newer offerings such as platform-based services (such as ecommerce or advertising), enterprise IoT and media and entertainment will drive service revenue growth.

Number of respondents selecting a given answer
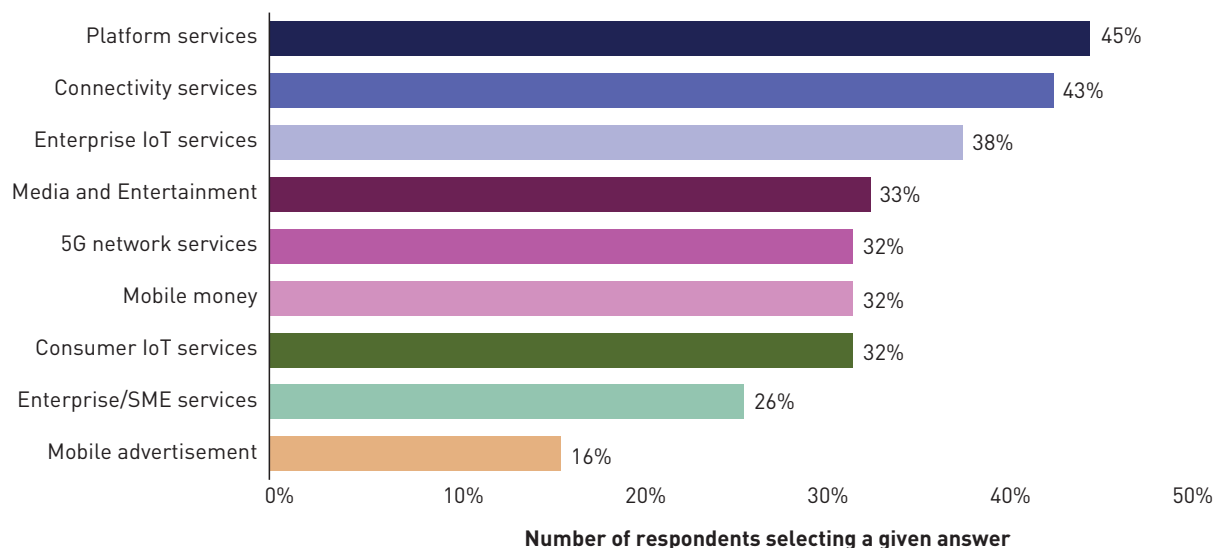
Source: Analysys Mason

Figure 13: Key use cases that CSPs anticipate will drive service revenue growth, worldwide

The partner management function is another key factor that will drive the evolution of monetisation platforms. Over 80% of CSPs worldwide concede that their current partner management systems will need to change to support emerging use cases. These systems are increasingly strategic for CSPs due to the growing potential of, and demand for, support of complex value chains, particularly in enterprise use cases enabled by 5G and IoT. As a result, several CSPs are planning to upgrade their partner management systems in the short to medium term.
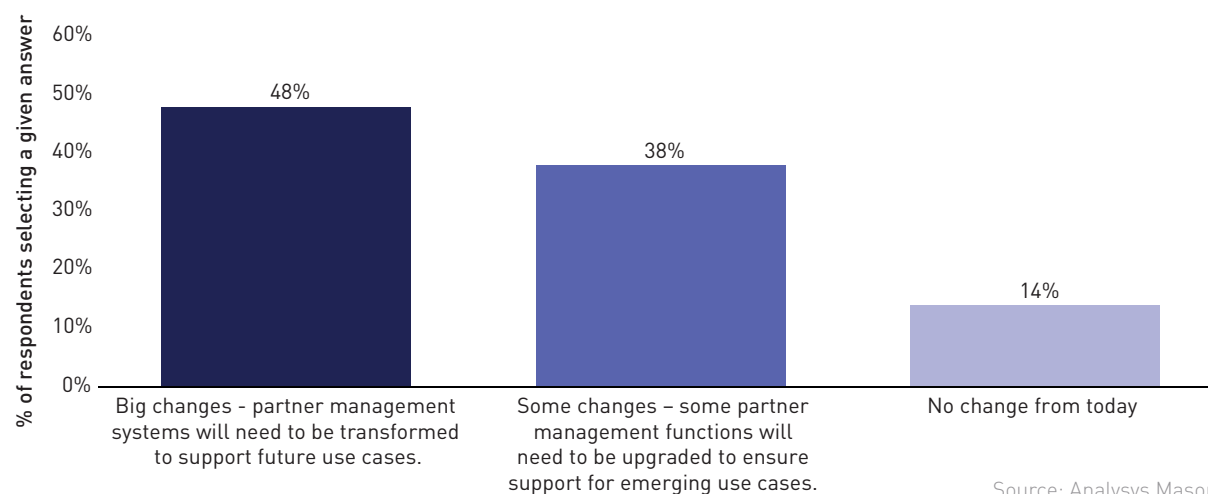
Source: Analysys Mason

Figure 14: CSPs' expectations for the evolution of partner management systems

"With the addition of newer partners in the value chain, and adoption of newer use cases enabled by 5G, enhancements to existing partner management systems would become a necessity." Tier 1&2 CSP, EMEA

Although CSPs are adopting different methods for transforming their monetisation system, the common underlying approach is evolutionary transformation rather than a full-stack swap. Most CSPs worldwide are planning to extend their existing systems in the short to medium term to enable the rapid support of new use cases (see Figure 15). In the medium to long term, CSPs anticipate making progress in evolving the architecture framework for monetisation systems from a monolithic model to one that is micro-service-oriented one. Over 30% of the CSPs that we surveyed showed interest in cloud-based deployments, although this is primarily for non-mission-critical, non-real-time use cases.
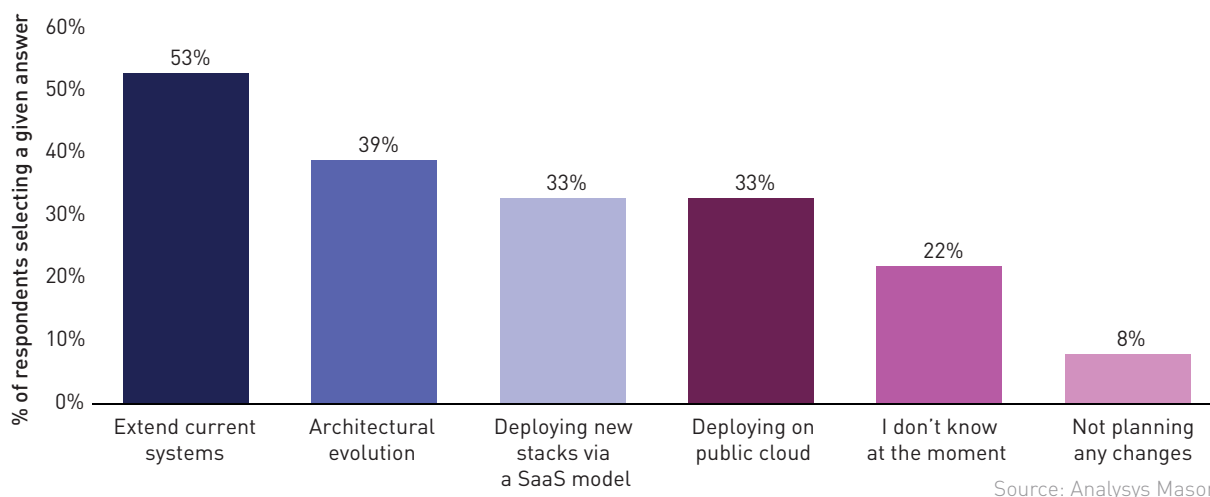

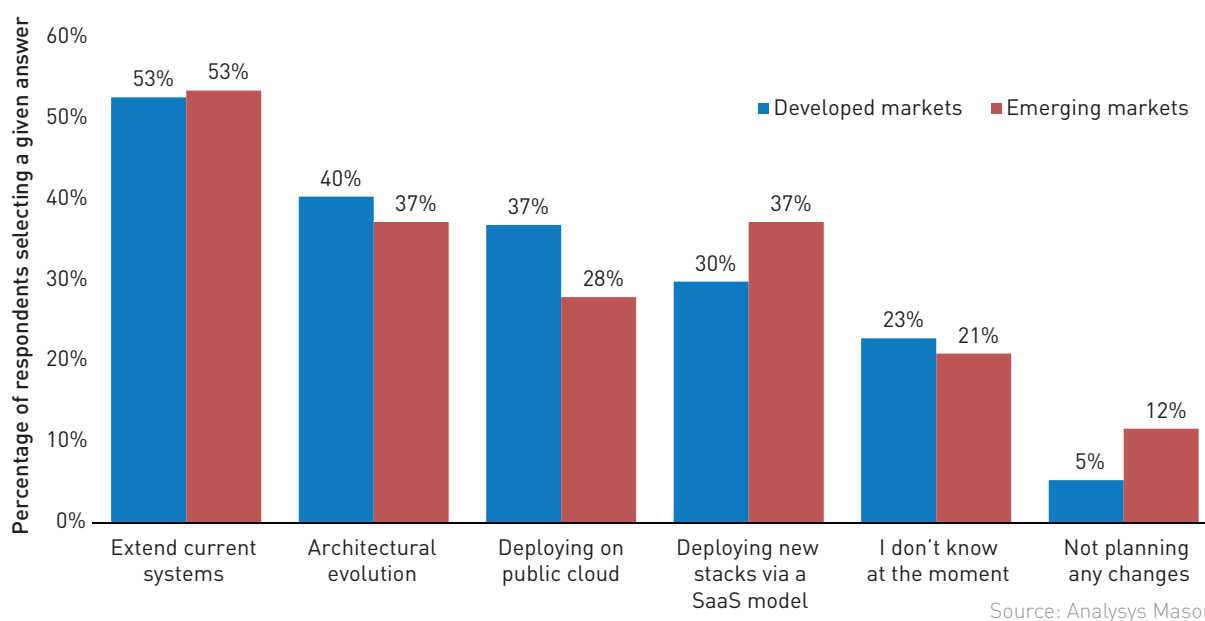Figure 15: Anticipated changes to partner management systems

Figure 16: CSP approaches to evolving monetisation systems/processes over the next 5 years

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5. Recommendations to CSPs

1. CSPs need to urgently prepare a long-term plan for evolving their billing and charging systems. While most CSPs acknowledge the necessity of transforming their monetisation stacks, there is limited awareness of the time and complexity involved in transforming the underlying legacy support systems. Large transformations are best done in a phased manner to mitigate risks and to control costs. CSPs' readiness for embracing and effectively monetising emerging business models over the next 5 years and beyond will be closely tied to the progress that they make in evolving their billing and charging systems.

2. CSPs should invest in modernising their partner management systems in order to effectively monetise the emerging enterprise opportunities driven by 5G and IoT. These systems are essential for supporting multi-step, multi-dimensional value chains and for enabling dynamic settlement models to reach new customers in new markets. To capitalise on emerging enterprise-related revenue opportunities, CSPs should have the support systems necessary to leverage their infrastructure and connectivity to seamlessly bring on board new partners and to provide support for complex value chains and partner agreements.

3. To accelerate transformation of monetisation systems, CSPs should partner with vendors that have strong telecoms experience and expertise in modern software development methodologies. Many of the technological innovations applied in other enterprise verticals cannot be 'lifted and shifted' into the telecoms domain without significant fine-tuning and customisation. This requires partners that understand telecoms and are well-versed in emerging software methodologies.

6. Conclusion

Although cost, complexity and organisational structure continue to be obstacles to CSPs' progress in modernising their monetisation platforms, the momentum is shifting as CSPs prepare for the transformation of their support systems, which itself is being driven by the growing urgency to be ready for emerging use cases. The impending launch of 5G and the anticipated growth in the number of enterprise-related use cases will driv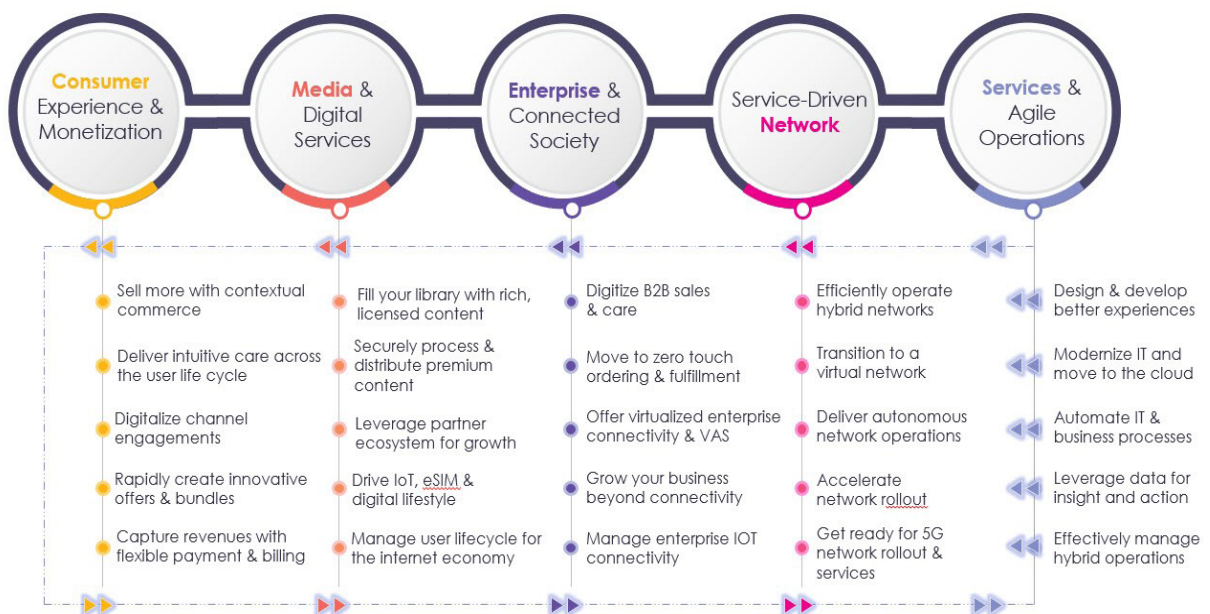e investment in this segment in the short to medium term. However, CSPs need to prioritise the development of long-term, partner-led plans to evolve their entire monetisation stack to next-generation technologies, rather than being driven by short term use cases. This will ensure that CSPs are ready to effectively and efficiently introduce, support and monetise new services over the next decade.

Annex A: About Amdocs

Amdocs is a leading software and services provider to communications and media companies of all sizes, accelerating the industry's dynamic and continuous digital transformation. With a rich set of innovative solutions, long-term business relationships with 350 communications and media providers, and technology and distribution ties to 600 content creators, Amdocs delivers business improvements to drive growth. Amdocs and its 25 000 employees serve customers in over 85 countries. Listed on the NASDAQ Global Select Market, Amdocs had revenue of USD4.0 billion in fiscal 2018. For more information, visit Amdocs at www. amdocs.com.

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Rapidly create innovative offers & bundles	Drive IoT, eSIM & digital lifestyle	Grow your business beyond connectivity	Accelerate network rollout	Leverage data for insight and action
Capture revenues with flexible payment & billing	Manage user lifecycle for the internet economy	Manage enterprise IOT connectivity	Get ready for 5G network rollout & services	Effectively manage hybrid operations

Annex B: About the authors

John Abraham (Principal Analyst) John is a member of Analysys Mason's Telecoms Software and Networks Research team. He leads our Monetisation Platforms and Customer Engagement research programmes and our research initiatives related to digital transformation. John also contributes to our research into cloud-native architecture models, which is covered as part of the Digital Infrastructure Strategies 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 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).

Hansang (Andy) He (Consultant) Andy works in Analysys Mason's Custom Research team. He has worked on engagements commissioned by a range of clients, ranging from telecoms operators and industry bodies to quasi-autonomous non-governmental organisations and vendors. Much of his recent work has focused on network virtualisation and digital transformation, encompassing case studies underpinned by quantitative business models, vendor evaluations, competitive landscape studies and development of go-to-market strategies. He began his career as an analyst covering the emerging Asia–Pacific (EMAP) region. Andy holds a bachelor's degree in Electronic and Communications Engineering from the University of Bristol and a master's degree in Management and Strategy from the London School of Economics and Political Science.

Annex C: Analysys Mason's consulting and research are uniquely positioned

Analysys Mason is a trusted adviser on telecoms, technology and media. We work with our clients, including communications service providers (CSPs), regulators and end users to:

- design winning strategies that deliver measurable results
- make informed decisions based on market intelligence and analytical rigour
- develop innovative propositions to gain competitive advantage.

We have around 220 staff in 14 offices and are respected worldwide for the exceptional quality of our work, as well as our independence and flexibility in responding to client needs. For over 30 years, we have been helping clients in more than 110 countries to maximise their opportunities.
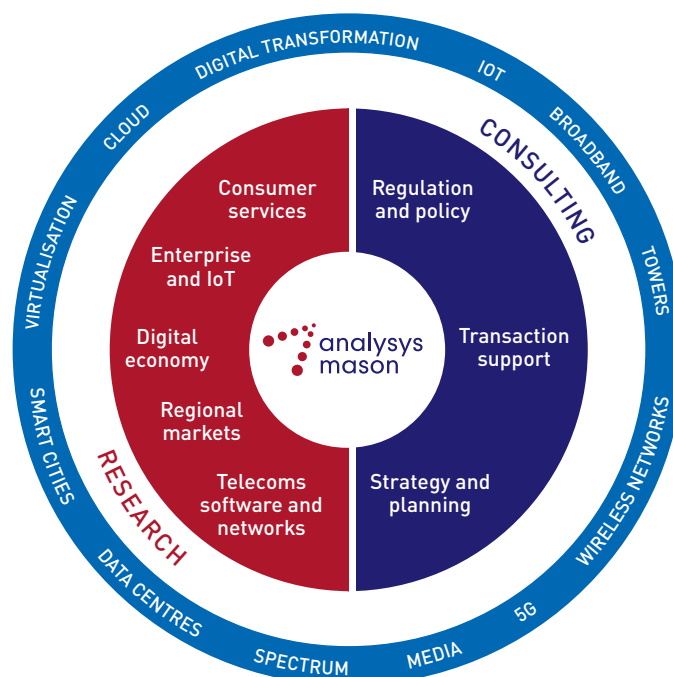
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- We deliver tangible benefits to clients across the telecoms industry:
    - communications and digital service providers, vendors, financial and strategic investors, private equity and infrastructure funds, governments, regulators, broadcasters, and service and content providers.
- Our sector specialists understand the distinct local challenges facing clients, in addition to the wider effects of global forces.
- We are future-focused and help clients understand the challenges and opportunities that new technology brings.

Research

- Our dedicated team of analysts track and forecast the different services accessed by consumers and enterprises.
- We offer detailed insight into the software, infrastructure and technology delivering those services.
- Clients benefit from regular and timely intelligence, and direct access to analysts.