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FEATURED IN THIS ISSUE

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In this issue

Welcome to the latest edition of the Analysys Mason Quarterly

Welcome to the fourth Analysys Mason Quarterly for 2017.

In our first article, Catherine Hammond highlights the opportunities within the micro enterprise segment. She examines how micro enterprises will be significant contributors to sustaining and increasing enterprise revenue for operators in all regions.

David Abecassis considers the fast pace of digital transformation and how this could add EUR15 billion to operators' cash flow in EMEA by 2021. He discusses how telecoms operators will thrive or struggle depending on their ability to adapt or transform their strategy and operations.

There is now evidence that cord-cutting represents a sustained trend in some developed markets, leading to a continuing decline in the number of pay-TV subscriptions. Dion Teo explains how operators must refocus their traditional pay-TV strategies to successfully compete and 'futureproof' their business models.

Flexible market based management approaches for spectrum can bring both opportunity and risk. Janette Stewart summarises some of the key questions and concerns addressed in an Analysys Mason study commissioned by the Australian Communications and Media Authority (ACMA).

Operators continue to seek growth from connectivity, but are looking for ways to support this revenue and gain new sources of income. Tom Rebbeck explores the four broad strategies they are adopting and explains how operators must also be realistic about the likely impact of any new initiatives.

The current audiovisual regulatory framework is facing a strong challenge from a faster-than-anticipated IP transition. Lluís Borrell explains how traditional broadcasting needs to become more competitive in response to this development and highlights two key questions that need to be addressed in the short term.

We welcome the opportunity to discuss your views on these and any other key industry topics. I look forward to hearing from you.



BRAM MOERMAN
CEO Analysys Mason

Operators should consider targeting micro enterprises in order to sustain and increase enterprise revenue

“Micro enterprises will be significant contributors to sustaining and increasing enterprise revenue for operators in all regions.”



CATHERINE HAMMOND
Senior Analyst, Research

At a global level, operator revenue from traditional enterprise voice and data services is in decline. Significant growth opportunities still exist in emerging markets, but will gradually diminish as penetration approaches saturation. At the same time, there exists a rapidly growing global market for enterprise ICT services, often delivered through the cloud. Enterprise requirements for telecoms services are extremely diverse and the challenge for operators is to identify and successfully target growth opportunities within different regions and business segments. This article draws on our recently published global enterprise forecasts¹ to highlight opportunities within the micro enterprise segment.

Revenue from legacy services will eventually decline for operators in all regions

In high-income markets, most large telecoms operators are experiencing a decline in their enterprise revenue.² This is a consequence of price competition as operators struggle to

differentiate themselves in largely saturated markets, and face increasing competition from substitute OTT services and cloud-based alternatives.

The situation for operators in emerging markets is more positive; we forecast that emerging Asia-Pacific will experience enterprise revenue growth of 2.6% per year between 2017 and 2022. Sub-Saharan Africa will experience a similar rate of growth, but from a much lower base, while Central and Eastern Europe and the Middle East and North Africa are also forecast to enjoy healthy rates of growth in this period. However, if founded only on an increasing penetration rate, this growth will not be sustainable in the longer term.

Micro enterprises offer prospects for revenue growth in all regions

Micro enterprises (organisations with fewer than 10 employees) will be significant contributors to sustaining and increasing enterprise revenue in all regions. We estimate that micro

enterprises account for 40% of employment worldwide,³ but less than 20% of operators' enterprise retail revenue. Differences in business demographics mean that the share of enterprise revenue from micro enterprises varies considerably by region, but we forecast growth in this segment to outpace that of other segments in almost all regions apart from emerging Asia-Pacific and the Middle East (where revenue growth is still significant for all sizes of enterprise).

In middle-income markets, growth for the micro enterprise segment will arise principally from an increase in the provision of fixed and mobile data services – more broadband connections and greater provision of mobile handsets and smartphones to employees. As telecoms services become ever more integral to the business requirements of a wide range of micro businesses, operators would do well to provide competitive business-grade products targeted at this market. Engaging with these enterprises as business customers rather than servicing them through consumer channels will better enable operators to deliver a wider range and higher quality of services as their business requirements grow.

New ICT services provide an opportunity to increase revenue and reduce churn

In high-income markets, most opportunities for growth in the micro enterprise segment will arise from demand for ICT services such as security, data storage, and software-as-a-service (SaaS). These services are often characterised by low entry prices and scalability, which make them an ideal fit for the financial capabilities and ambitions of micro enterprises. The internal IT capabilities of such enterprises is typically low, as is their capacity to manage multiple contracts with multiple suppliers. Operators already providing voice and data connectivity services to this segment are well-placed to gain significant market share if they can deliver suitable off-the-shelf products and services and can adapt their sales channels and customer support appropriately. Swisscom, for example, targets some of the smallest micro enterprises (up to 5 employees) with a service bundle that includes Internet failover, automatically diverting businesses onto its mobile data network in the case of fixed-line outages.

Cloud storage, Microsoft 365 and unified communications solutions are easily available as add-ons and personalised advice is available either via a phone call, or a face-to-face meeting with a business specialist in one of Swisscom's network of shops.

A similar opportunity exists for operators to deliver ICT services to small and medium enterprises. In high- and middle-income markets, the use of cloud services is already widespread for these segments⁵ but will continue to expand, and enterprises in emerging markets will increasingly require similar services. Several operators are addressing this by offering bundles suitable for specific industry verticals, for both micro enterprises and larger SMEs. Vodafone's Ready Business solutions for example (targeted at industries including construction, retail, logistics and manufacturing) have met with initial success in several markets.

Analysys Mason is helping clients to develop their enterprise strategies, both through our published research and through consulting projects. As well as the worldwide enterprise forecasts referenced in this article, we also publish regional- and country-level forecasts and analysis.

Questions?

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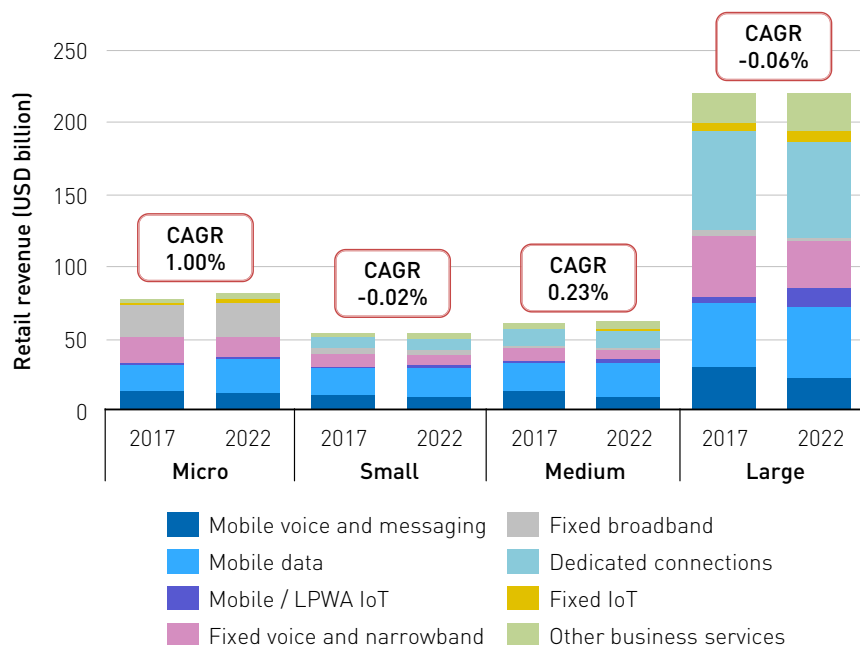


FIGURE 1: OPERATOR RETAIL REVENUE FROM TELECOMS SERVICES TO ENTERPRISES, BY SERVICE AND SEGMENT, WORLDWIDE, 2017 AND 2022 AND CAGR 2017-2022⁴ [SOURCE: ANALYSYS MASON, 2017]

¹ For more information see Analysys Mason's Telecoms services forecast for small and medium enterprises: Western Europe 2017-2022, Telecoms services for small and medium-sized enterprises: worldwide forecast 2017-2022 and Telecoms services for large enterprises: worldwide forecast 2017-2022

² For more information, see Analysys Mason's Singtel outperforms a declining telecoms enterprise market.

³ We include both private and public-sector workers, the self-employed and sole traders. However, we seek to exclude informal workers such as smallholders and casual labourers and those working for home-based businesses where communications needs are fully met by existing consumer services.

⁴ Dedicated connections revenue includes managed services such as IP-VPN. Fixed IoT connectivity revenue includes fixed broadband, PLC and other technologies.

⁵ Our survey of SMEs in 2017 indicates that 67% of SMEs are already using at least one cloud service. For more details, see Analysys Mason's Enterprise survey 2017: ICT services for small and medium-sized enterprises.

Partnering for digital transformation: a EUR15 billion opportunity for EMEA operators

“Digital transformation is happening fast, and could add EUR15 billion to operators’ cash flow in EMEA by 2021.”



DAVID ABECASSIS
Partner, Consulting

Where do we go next? After nearly a decade of disruption, telecoms operators in most developed and many developing markets, in Europe and elsewhere, can think again about growth. Now is the time, therefore, for operators to define how they will grow during the next business cycle.

It is clear that part, if not all, of the answer to this question lies with digital and the Internet. Telecoms operators will thrive or struggle depending on their ability to adapt or transform their strategy and operations to make the most out of the content, services and technology enabled by the Internet.

This ‘digital transformation’ takes many guises (see Figure 1). For some operators, it means focusing on their core business, providing best-in-class

connectivity for their customers to access online content and services with the best possible quality of experience. For others, it means entering new markets, thanks to lower barriers to entry made possible by the Internet. For all, however, digital transformation also means working differently, investing differently, to make the most of the rapid pace of change in software and networking that is taking place, driven by the largest Internet players.

Operators that are trying to protect their core business will find that differentiation is a challenge

For operators that are focused on shoring up their core business, a key challenge is differentiation. On the one hand, they face competition, which in Europe remains as intense as ever in both mobile and fixed

markets. How can they convince end users that they are worthy of their loyalty, rather than ‘me-too’ providers that can be joined and left every 12 to 24 months purely based on prices? On the other hand, they are also victims of their success in launching increasingly high-quality broadband services: voice and messaging services are now add-ons to broadband access, and superfast broadband (30Mbit/s or 50Mbit/s and more) is available through both fixed and mobile networks in many countries, so most people can get entry-level broadband that is ‘good enough’ for their use. How can operators convince them to upgrade to better, but more-expensive products (including fibre-based access)?

There is no single answer, but many operators are now effectively using online content and applications as drivers of

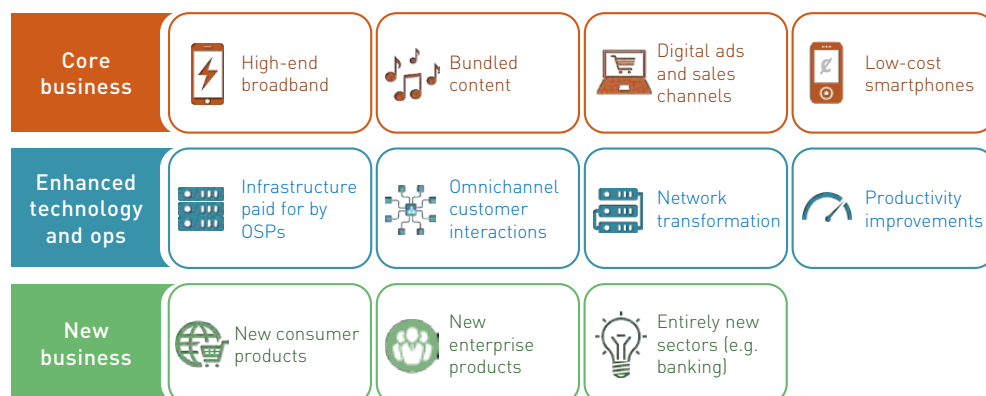


FIGURE 1: SELECTED ONGOING DIGITAL TRANSFORMATION INITIATIVES [SOURCE: ANALYSYS MASON, 2017]



demand for connectivity, through advertising (for example, Virgin Media is promoting 200Mbit/s fibre broadband by emphasising low-latency gaming), bundling (for example, many operators are bundling Netflix with broadband and offering differentiated promotions with different tiers of broadband) and digital marketing.

Some operators are entering new markets and have many assets to help them do so

Operators that are entering new markets are experimenting in a wide range of ways. In the USA, Verizon and to a lesser extent AT&T are making large bets on new markets: digital advertising (Yahoo!, AOL), pay-TV (DirecTV) and many other acquisitions, which must be large scale to make a difference in hundred-billion-dollar businesses. In Europe, Orange has entered the retail banking market in Poland, and is preparing to launch in France. Partly this is a portfolio strategy: make a lot of bets and see what sticks.

However, the market entry strategy of most operators relies on assets that they have had all along but did not previously exploit outside telecoms: customer relationships, including billing, which make it possible to act as a payment channel for small transactions (for example, app stores); a physical presence in tens of thousands of neighbourhoods, which are fast becoming expensive advertising billboards but can also act as points of contact and service centres for many new services; and trust – although operators complain that they are being held to higher standards of data protection and privacy than other businesses, in practice this has helped them become trusted and liked by consumers. Consumer surveys regularly value telecoms brands highly, often in the top three in many countries.¹ This is despite the fact that the telecoms industry only represents 1–3% of GDP in most developed markets.

Operators are engaged in network and operations transformations in order to reduce cost and improve performance

Finally, every operator is now engaged in a deep transformation of their networks and operations, to make the most of technology pioneered online by 'web-scale' online service providers. This involves making more extensive use of software and cloud platforms to increase the agility of networks and platforms. Where it once took months and millions of Euros in investment to launch a new service, dedicated hardware, virtualisation and software-defined networking (SDN) now enable operators to reallocate resources and launch new services in weeks, if not days. They are also investing in customer care platforms that enable them to interact with customers whenever, wherever and however these customers want, improving satisfaction and retention. Ultimately, the goal is to reduce costs and improve productivity – to the benefit of operators themselves, their investors and their customers.

This feels like a long and hard journey, but make no mistake: the digital transformation is happening fast, and the rewards for the telecoms sector as a whole are significant. We estimate that successful transformation, through judicious investment and partnerships, could add up to EUR15 billion to operators' cashflow in Europe, the Middle East and Africa (EMEA) by 2021, a 50% increase on current levels (see Figure 2).

Analysys Mason recently published a report on the value of partnering for digital transformation: *Operators' digital transformation: unlocking EUR15 billion through partnerships with OSPs*.² Other recent research on digital services and transformation includes *Telecoms operator growth strategies: case studies and analysis*.³

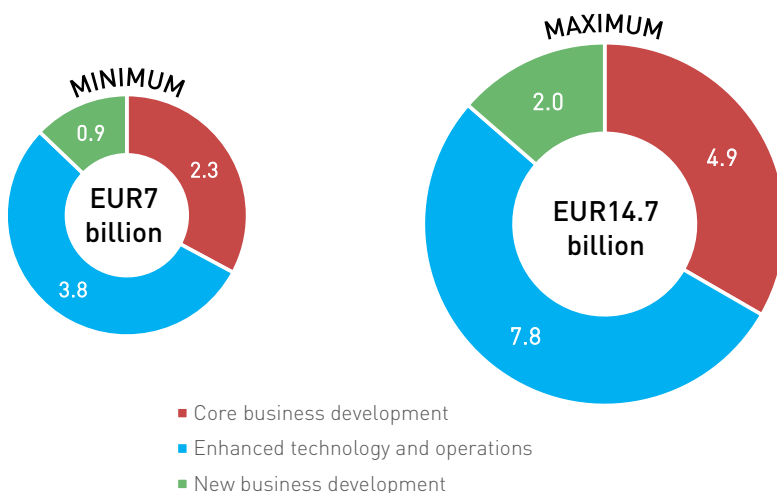


FIGURE 2: ESTIMATES OF THE CASHFLOW IMPACT OF DIGITAL TRANSFORMATION THROUGH PARTNERSHIPS, EMEA, 2021 [SOURCE: ANALYSYS MASON, 2017]

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¹ For example, BrandZ ranks Vodafone as the most valuable UK brand and BT is at number four. For more information, see www.research-live.com/article/news/vodafone-uks-most-valuable-brand/id/5023372.

² See Analysys Mason's *Operators' digital transformation: unlocking EUR15 billion through partnerships with OSPs*.

³ See Analysys Mason's *Telecoms operator growth strategies: case studies and analysis*. Available at www.analysysmason.com/operator-growth-strategies-rdmv0.

Operators must rapidly revise their pay-TV strategies as cord-cutting accelerates

“Increasing cord-cutting coupled with difficulties in reducing costs present a challenging outlook for pay-TV operators – they must ‘futureproof’ their TV business models.”



DION TEO
Manager, Consulting

The arrival of over-the-top (OTT) video services such as Netflix and Hulu first raised the possibility of ‘cord-cutting’, as the availability of more affordable OTT video content posed a potential threat to large traditional pay-TV bundles. The extent of cord-cutting initially appeared to be limited, but there is now evidence that it represents a sustained trend in some developed markets, leading to a continuing decline in the number of pay-TV subscriptions.

Traditional pay-TV subscribers are increasingly moving to OTT alternatives

There has been a steady decline in pay-TV subscribers in most mature markets over the past 2 years, as shown in Figure 1.

The two Asian markets (Hong Kong and Singapore) have seen a particularly significant drop in pay-TV subscriptions since the beginning of 2015 – up to 4% in the first year and 9% by the second.

This decline in pay-TV subscribers is not only expected to continue, but also to accelerate. There are several factors driving this trend.

- The adoption of live TV and the expansion of high-quality video content available over OTT.
 - OTT services initially focused on video and principally replaced revenue from physical video. However, they are now increasingly offering live TV services, which are

more direct substitutes for pay-TV services.

- Live sports are often considered to be the last bastion of traditional pay-TV subscriptions, but even these are now increasingly available through OTT providers. For example, NFL and ATP World Tour are available on Amazon Prime Video, UEFA Champions League and MLB on Facebook and ESPN is to launch an OTT service in 2018.
- Disney has launched its own OTT TV and video service, bringing its vast catalogue directly to consumers and thus competing directly with pay-TV services.
- Netflix is planning to spend USD6 billion on original content in 2017 – this figure is expected to increase as it expands its content portfolio to drive membership growth.
- Increasing levels of piracy and use of unofficial streaming mediums.
 - Season 7 of HBO’s Game of Thrones saw each episode pirated an average of around 140 million times compared to around 32 million legally-viewed streams per episode.¹
 - Relatively cheap ‘grey market’ Android set-top boxes are increasingly popular. These allow users to access a broad range of content without incurring an expensive monthly subscription fee

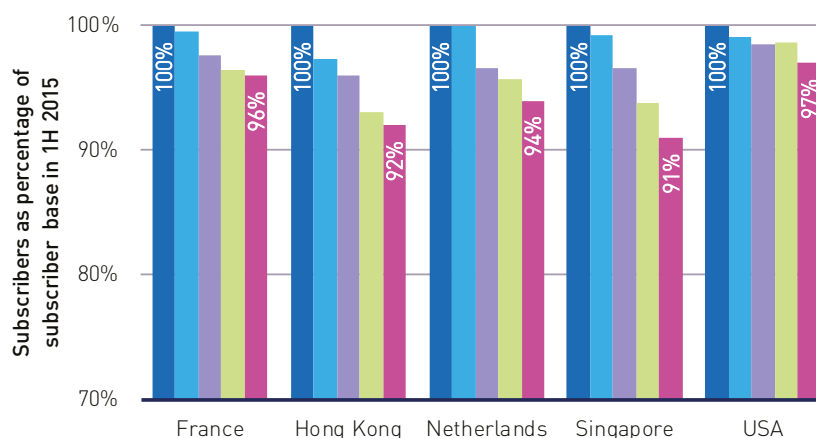


FIGURE 1: PAY-TV SUBSCRIBERS AS A PERCENTAGE OF THE NUMBER OF SUBSCRIBER IN 1H 2015, SELECTED MATURE MARKETS, 1H 2015–1H 2017 [SOURCE: OPERATORS’ FINANCIAL REPORTS]

Attractive content is therefore increasingly available over alternative platforms at more affordable prices than those of traditional pay-TV. This is likely to lead to further cord-cutting across pay-TV markets and a subsequent decline in traditional pay-TV revenue.

Traditional broadcasting cost structures provide pay-TV operators with limited flexibility to maintain their profitability

Declines in both pay-TV subscriber numbers and revenue require a corresponding decrease in operating costs if pay-TV operators are to maintain their current profit levels. Content is generally the largest operating cost item for pay-TV operators. However, existing content contracts (at least for premium content) typically involve fixed lump-sum payments or high minimum guarantees, both of which will reduce pay-TV operators' profitability when subscribers and revenue decline. We understand from our interviews with pay-TV operators that negotiating for discounts on premium content contracts has proved to be extremely challenging. Content providers have growing demand from new large digital distributors, which are ready to pay significant amounts for these rights – in some cases several times what traditional operators pay. The providers therefore see no need to offer discounts. For example, Comcast has repeatedly stated in its financial reports that it "[expects] that [its] programming expenses will continue to increase, which may negatively impact [its] operating margin", suggesting that even large operators are finding it difficult to maintain or reduce content costs.

The cost of broadcasting infrastructure is another component (beyond the cost of content) that often does not scale with revenue and subscribers. Investments in satellite transponder capacity for DTH operators and in terrestrial multiplex capacity instead scale with the number and quality of channels. Pay-TV operators will have to invest more in broadcasting infrastructure to support the transmission of 4K channels, as 4K TV penetration and the availability of content for these channels increases. This investment will be increasingly difficult to



justify in an environment where revenue is stagnating or declining. Fixed network broadcast infrastructure for cable and IPTV operators scales more directly with subscriber numbers (or rather, premises passed), but also does not provide flexibility in terms of cost savings to adjust for lost revenue.

Operators must refocus their traditional pay-TV strategies to pivot to OTT and revamp business models, both in terms of revenue and cost

The expected reduction in pay-TV subscriber numbers, coupled with the corresponding difficulty in reducing associated costs, presents a challenging outlook for operators' traditional pay-TV businesses. Profits are likely to face significant downward pressure. Operators must consider innovative revenue and cost initiatives to sustain their traditional pay-TV businesses in a declining market, as well as considering moving into OTT TV and video services. Possible initiatives operators could adopt include:

- providing excellent customer service by offering the superior user interface and experience (integrating live TV, video on-demand, catch up services, cloud DVR and video archive services) that consumers increasingly expect
- breaking up traditional high-cost, large TV bundles and moving towards smaller 'a la carte' or 'bite-sized' offerings to compete with the equivalent 'skinny' or 'pay-lite' OTT pay-TV bundles that appeal better to some customer segments
- increasingly adopting OTT TV and video distribution and re-examining options such as OTT content delivery to reduce broadcasting infrastructure costs,

which are partly borne by consumers (for example, broadband) and content providers (for example, content delivery networks)

- partnering with new content providers or other OTT providers in revenue-sharing models where possible to avoid large lump-sums or high minimum guarantees
- seeking greater scale in content negotiations by setting up joint ventures with pay-TV operators in other regions (or even competing pay-TV operators) to acquire content from providers – the resulting stronger negotiating position may also yield lower lump sums and minimum guarantees.

In summary, innovation and partnerships will be key for operators to successfully compete in the new OTT TV and video market by offering attractive content, flexible pricing and the integrated experience consumers now expect. Pay-TV operators must adapt quickly as they are competing against innovative and fast-moving players, such as Amazon, Netflix, Viu and YouTube TV.

Analysys Mason has extensive experience in working with pay-TV operators on a broad range of issues, including business planning, platform strategy, content optimisation and regulatory support. We have previously published discussions on live TV OTT² and the impact of IP on broadcasting.³

Questions?

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¹ Source: <http://www.bbc.co.uk/newsbeat/article/41197556/game-of-thrones-s7-illegally-downloaded-billion-times-says-piracy-tracking-firm>

² For further details, see Analysys Mason's Article Live TV OTT offers are accelerating the transformation of TV and video markets: implications for stakeholders. Available at <http://www.analysismason.com/About-Us/News/Newsletter/live-tv-ott-offers-jul-17>

³ For further details, see Lluís Borrell's presentation from the IBC2017 conference Is IP really having an impact on broadcasting? Available at <http://www.analysismason.com/About-Us/News/Events/ibc2017-conference>

Greater flexibility in spectrum use: do the benefits outweigh the risks?

“A key feature of a new spectrum-management legislation is migration to a single licensing system.”



JANETTE STEWART
Principal, Consulting



Many spectrum regulators are aiming to achieve greater flexibility in spectrum use, both to encourage innovation and to find more-novel ways to enable new services to be launched without the need to reassign frequencies from their current use.

Analysys Mason was commissioned by the Australian Communications and Media Authority (ACMA) in 2017 to assess the market opportunities – and the risks – associated with more-flexible, market-based management approaches for spectrum. This article summarises some of the key questions and concerns addressed in this study.


An overview of Analysys Mason's ACMA study

Trends such as the growing demand for spectrum, advances in wireless technologies and changing worldwide supply chains (with expectations of rapid growth of the Internet of Things (IoT)) have emerged, prompting a need to consider changes to the spectrum-management framework. In Australia, the government has proposed a programme of spectrum reform, and new spectrum-management legislation is now being implemented to replace previous legislation. The new legislation gives the ACMA new powers aimed at responding to rapid changes in market demand and the latest developments in wireless technology, including trends towards

more-dynamic operation of wireless systems.

A key feature of the new legislation is migration to a single licensing system. The overall aim of this legislation is to give the ACMA greater flexibility to adapt the issuing of licences and licence conditions to meet the demands of new technologies, and to improve the scope for changes of spectrum use to occur. The inclusion of a 'spectrum authorisations' option within the new framework could potentially create opportunities for different applications, with different requirements for spectrum access to coexist in the same spectrum. This might also facilitate emergence of the latest international wireless technological advances in dynamic spectrum access (DSA) in the Australian market, such as use of database systems that will determine operating parameters for concurrent use of spectrum, by reference to existing spectrum use and sharing conditions (for example, geo-location systems).

As input to its strategy for spectrum management reform under the new legislation, the ACMA asked Analysys Mason to assess best international practice in spectrum management, and to consider how best practice, market-based approaches to spectrum management might be extended in Australia towards achieving more



flexibility in use as a means of meeting future spectrum demands. The study was completed in June 2017 and is intended to form an input to the ACMA's policy thinking in relation to prioritising new spectrum management approaches under the new legislation.

Within the study, we considered the appropriateness of applying flexible management approaches to different types of spectrum. Where market trends are clearly pointing towards re-assignment of key spectrum bands (for instance, due to under-utilisation), we also considered how regulators might weigh up the trade-offs between re-assignment, compared with moving to a position where more bands might be shared.

International best practice for spectrum management

As part of our study, we surveyed the approaches to spectrum management used in eight jurisdictions worldwide. From this survey, we selected examples of markets where regulators are implementing market-based mechanisms for spectrum assignment, and have evolved these towards more-sophisticated market-based spectrum assignment and sharing approaches. We focused primarily on sharing and flexible use that might potentially be facilitated by technological co-ordination techniques, such as DSA.

We found that current international trends highlight the importance of achieving more-flexible and dynamic use of spectrum as one mechanism of meeting future spectrum demand. However, the costs and timescales involved in adopting new market-based mechanisms facilitated by technological solutions (for example, the use of geo-location databases to manage the use of spectral gaps in real time, and to control the operating parameters of systems to avoid interference with other spectrum users in the same location) should not be underestimated, and represent a key barrier to wider adoption.

We also considered the risk that the potential for interference will rise with increased numbers of users sharing the

same spectrum. The extent to which this risk becomes unmanageable by the market is dependent on the approach to sharing (for example, via shared-use licences that the regulator enforces, or via a class licence or licence exemption, where many devices and systems are operating in an uncoordinated way). An important conclusion from our assessment was that the innovation goals that regulators are seeking to achieve from flexible spectrum use will be compromised if the risk of radio interference cannot be managed by the market. In addition, there is likely to be less willingness to invest in deploying services where predictability of high-quality spectrum access is absent.

We noted that the success of more-sophisticated market mechanisms for spectrum sharing will rely on the availability of real-time information on spectrum management and the interference environment, to facilitate frequency co-ordination and interference avoidance. The means of providing and maintaining this information in real-time are still being developed.

Finding the right balance for developing new spectrum management frameworks

We found that finding the right balance – between providing flexibility for new market players and ensuring predictability (including a stable competitive environment) for traditional mobile and wireless operators – is one of the challenges that the ACMA and other regulators potentially face in developing new management frameworks for spectrum. Where large-scale investment in new nationwide networks is required (for instance, within the mobile market), there may still be a need for operators to have individual licences that provide exclusive use of spectrum, to avoid undermining investment certainty through a lack of guarantee concerning spectrum quality.

We have also noted that, although flexibility in spectrum use is a useful general attribute, it is less important in periods when market developments are clearly pointing towards reassignment of key spectrum (for example, towards

mobile communications), as often seems to be the case today. Notwithstanding this, it is likely that, without sharing, finding sufficient amounts of contiguous spectrum as desired for 5G 'new radio' radio access networks (5G RAN) (for example, in multiples of 100MHz) will be challenging to achieve. Given that the frequency bands being considered internationally for 5G are in use by various satellite services where substantial investment in new satellite technology has been made (for example, 3.3–4.2GHz, 26GHz and 28GHz), there will be a need to implement appropriate sharing provisions between 5G and the existing services in those bands.

To address these complex trade-offs, best practice in established spectrum management techniques will be relevant into the future, to enable regulators to prioritise their choices of management approach from the range of mechanisms that might be considered. This best practice includes establishing demand for spectrum, assessing alternative bands/bandwidths of interest for new uses, and identifying options for making spectrum available (as well as potentially consulting on these options with industry). This best practice can be facilitated by open decision making, including publishing materials online, consulting with industry and conducting cost-benefit assessments.

Analysys Mason provides a range of spectrum consulting services, including assessing trends in spectrum usage, meeting future demands, spectrum valuation, strategy and auction advice.

Questions?

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Operators are taking four approaches to grow revenue

“A consensus is emerging that operators should focus on growth that supports their core connectivity business.”



TOM REBBECK
Research Director
Enterprise & IoT

Operators continue to seek growth from connectivity, but are looking for ways to support this revenue and gain new sources of income. Operators are adopting four broad strategies to achieve growth (Figure 1), which we will explore in this article.

A consensus is emerging that operators should focus on growth that supports their core connectivity business, and that their explorations of new areas (if any) should be limited to a small number of opportunities. The days of pursuing tens, or even hundreds, of new project ideas (internally or through investment in start-ups) are over for most operators. We believe that this new approach is correct: operators should focus on a manageable number of initiatives in which they can leverage their unique assets.

Operators must also be realistic about the likely impact of any new initiatives – given the scale of their core business, anything adding 5% to revenue should be considered a success. Opportunities in adjacent markets can also serve to complement the core business by supporting ecosystem growth or strategically extending an operator's role in the value chain.

1. Connectivity remains an area of focus, and even growth

Connectivity is responsible for more than 90% of most operators' revenue. It remains an area of strategic focus and operators hope do more than manage the decline of connectivity revenue. For example, AT&T believes that demand for mobile video can still generate revenue growth and that improvements can be made in core metrics, such as ARPU and churn.

Sources of growth from connectivity include:

- acquiring new subscribers either in growing or emerging markets or by increasing market share in more-developed fixed or mobile markets
- moving customers up pricing tiers faster than unit prices fall, where competition allows
- improved segmentation (potentially using analytics to enable price discrimination)
- fixed-mobile convergence (FMC) to benefit from lower churn rates and potential upsell
- IoT and the connection of new 'things'.

2. Operators are also considering proximate services as a source of growth

Most operators are also considering services that are proximate to their connectivity offerings, which are intended to reinforce or leverage this core business. Examples of these include TV/video content and smart home solutions.

Many of the services in this category are lower margin than operators' core connectivity business, and investment plans must acknowledge this. Concerns about real margin dilution can be set aside if the services support an operator's core business. These new services may provide the following benefits for operators:

- extending their position in the value chain to insulate their core business from encroaching rivals

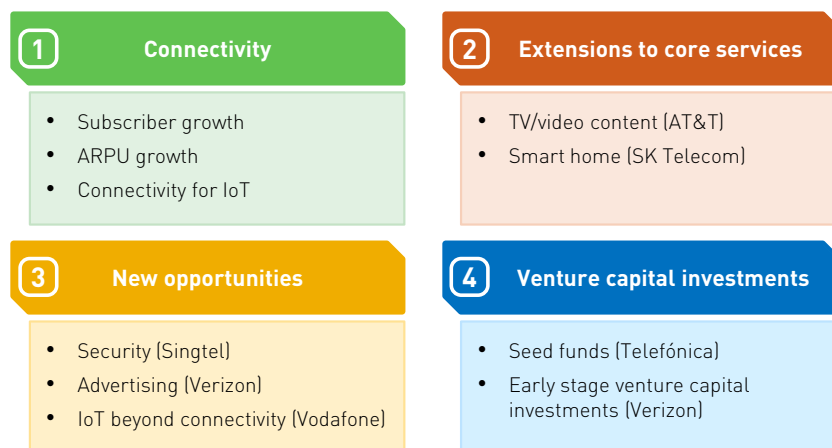


FIGURE 1: FOUR TYPES OF GROWTH PURSUED BY TELECOMS OPERATORS [SOURCE: ANALYSYS MASON]

- bundling additional services to maintain the value of existing ones ('more for more' pricing) and possibly slow down erosion of weaker elements in the bundle
- decreasing churn by bundling services, notably by associating higher churn services with lower churn ones
- building ecosystems to support other activities – for example facilitating online payments to support a content business.

3. Some operators are focusing on a small number of new service areas

In terms of new opportunities, operators are increasingly focusing on (and investing heavily in) a small number of specific, qualified services. For example, Verizon has invested many billions of dollars in advertising and IoT/fleet management, but has placed much less emphasis on other areas.

This represents a shift in thinking from early digital services divisions that were launched and quickly closed down, such as Telefónica Digital (2011–2014). These digital divisions explored many areas – typically ten or more – with limited investment (often less than USD10 million

for each area), and had little success. It is symptomatic of the problems of this approach that many of the services that survived were actually communications services (for example, Appear.in by Telenor).

The areas being explored now (such as advertising, IoT beyond connectivity and security) all exploit operators' existing assets (such as their brands, sales channels, connectivity services or customer bases), but are less 'proximate' to the core business than those described in the previous approach. They are designed to generate new revenue streams, not reinforce existing ones.

We believe that the most attractive of these opportunities will be nationally bound, require a high level of investment and benefit from some degree of regulatory protection.¹ These may provide barriers to entry, which will limit competition.

There are exceptions to this nationally-bound approach. In particular, Singtel has only limited scope for local expansion, as it is the dominant telco within the city state, and is therefore considering international opportunities for growth. It

is making billion-dollar investments in advertising (through Amobee and further acquisitions) and in security (with Trustwave). Growth for both Amobee and Trustwave will mostly come from markets where Singtel has no presence as a network operator.

4. Venture capital investments have become a more doubtful approach for operators, but some are still pursuing them

A small number of operators are continuing to pursue early stage investments in start-up companies – most notably Telefónica, but also Orange and Verizon.

Telefónica's approach is to invest small sums in a large number of technology start-ups (over 400 investments so far), most of which are not working with Telefónica and are developing technologies that have no obvious application for the operator. Telefónica is focusing on Latin America and believes it can uncover unique opportunities in the region, as few other investors are present.

However, most operators have reduced their start-up investment activities. They do not have the resources to discover or lead investments, and often struggled to derive any mutual benefits from them.

Exceptions to this trend are start-ups that have an obvious link to the operator's core business and mutual benefits that are easily exploited. Actility is an example of this. It has developed a platform for the IoT networking technology LoRa, and its investors include Orange, Swisscom and KPN, all of which have national LoRa networks.

This article was based on Analysys Mason's recent Report *Telecoms operator growth strategies: case studies and analysis*, which provides case studies on the growth strategies of 12 operators around the world.

Operator	Connectivity/FMC	Video/content	Enterprise IoT	Analytics	Consumer IoT	Security	Advertising	Financial services	Health	Ecommerce
AT&T										
Etisalat										
Orange										
SK Telecom										
Singtel										
T-Mobile										
Telefónica										
Telenor										
Telstra										
Turkcell										
Verizon										
Vodafone										

Key: ■ Stated strategic focus ■ Current activity

FIGURE 2: STRATEGIC GROWTH OPPORTUNITIES FOR SELECTED TELECOMS OPERATORS
[SOURCE: ANALYSYS MASON, 2017]

¹ For more information, see Analysys Mason's Telecoms operators should avoid competition with tech giants when selecting vertical market opportunities. Available at www.analysismason.com/vertical-market-opportunities-aug2016.

The rapid transition of video and TV to the Internet must be supported by updated policy and regulation

“As the market for TV and video over IP becomes mainstream, an audiovisual policy and regulatory framework based on traditional services is unlikely to be fit for purpose.”



LLUÍS BORRELL
Partner, Consulting

Digitally driven disruption is taking place at a rapid rate and within an unexpectedly wide range of industry verticals, including media and transportation markets. A clear example of this trend is occurring in the media market, where the increasing number of live TV OTT offers is accelerating a transformation of how video and TV content is delivered; as a result, traditional broadcasting needs to become more competitive in response. For instance, a recent report released by the Danish Agency for Culture and Palaces to discuss the impact of new media, argues for immediate action, noting that “in a few years, it may be too late.”¹

The current audiovisual regulatory framework is facing a strong challenge from a faster-than-anticipated IP transition

In a survey conducted during the IBC2017 Conference in Amsterdam in September 2017,² Analysys Mason asked participants to indicate when they thought that the majority of the European Union’s annual TV revenue (equivalent to EUR90 billion) would migrate to online channels. Most audience members reported that this could take place as early as 2025 (see Figure 1) much faster than most experts forecast.³ At this point, video and TV over IP will be mainstream; consequently, policy makers and regulators should be prepared.

Current TV and video regulation is intrinsically linked with the market structures and the policy objectives that underpin the traditional broadcasting industry. These objectives were designed to ensure that the relative scarcity of channels did not have a negative impact on the market or on content, while at the same time certain obligations were imposed on the broadcasters in exchange for gaining access to a market with high entry barriers. These audiovisual policies and regulations are regularly reviewed by policymakers. However, updates have been evolutionary, and to date, only relatively limited modifications of the current traditional policies and regulations have been implemented – or will be implemented as a result of the latest proposed changes in the relevant

laws. As the market for TV and video over IP becomes mainstream, an audiovisual policy and regulatory framework based on traditional services is unlikely to be fit for purpose for the majority of audiovisual consumption.

Other industries such as transport are being digitally disrupted; slow regulatory action may impair broadcasters’ ability to act

TV and video are not the only sectors undergoing digital disruption, nor are they the only ones with a regulatory response. For example, the transport industry has been significantly disrupted by ‘uberisation’ (the use of ride-sharing apps to compete in traditional regulated taxi markets), as described in the following two examples.

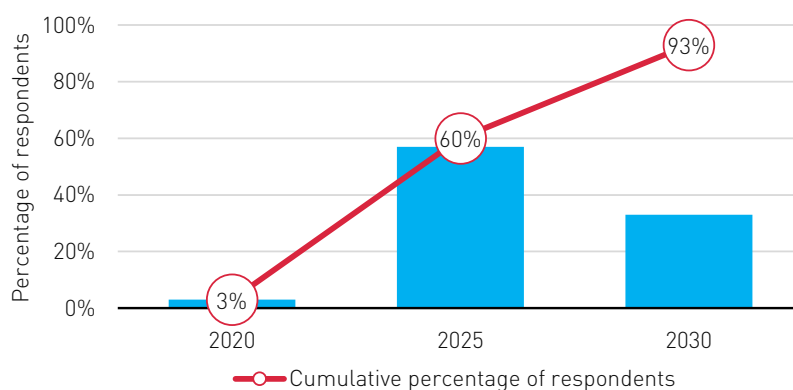


FIGURE 1: PERCENTAGE OF RESPONSES TO ANALYSYS MASON’S IBC SURVEY QUESTION: “WHEN WILL IP REVENUE EXCEED BROADCASTING REVENUE IN THE EUROPEAN UNION?”
[SOURCE: ANALYSYS MASON, 2017]

New York's yellow cabs

The yellow cabs (which can only operate with a 'medallion') that operate in New York have seen their value plummet following the rise of Uber and similar car services. All yellow cabs must have a New York City taxi medallion, of which there are a limit of 13 587, which has driven up prices to over USD1 million per medallion as recently as 2014, when the city auctioned 350 medallions for USD359 million. There are now 63 000 drivers offering services with ride-sharing apps, and the value of traded medallions in the summer of 2017 reached between USD150 000 and USD450 000.⁴ Taxi drivers report that they are not afraid of competition, but that unlicensed drivers face less restrictions on fares and passenger obligations such as disabled access. These conditions have led to foreclosures for many medallion owners, who find themselves unable to repay loans. As a result, questions are being raised about whether the current rules are appropriate and sustainable.

Uber in London

Transport for London (TfL) has recently stripped Uber of its London operating licence⁵,⁶ (in spite of employing 40 000 drivers and acquiring 3.5 million users after 5 years of service). TfL decided to withdraw Uber's licence primarily because of concerns about consumer protection and safety. Moreover, Mayor of London Sadiq Khan said that "all companies needed to play by the rules," endeavouring to create a level playing field where all companies provide similar services and play by the same rules, and that those rules provide certain protective measures for consumers and other drivers.

Lessons for video and TV regulation

Although there are significant differences between the video/TV and transport markets, there may be some analogies to, and lessons that can be implemented, during the evolution of the regulation of video and TV to IP. Most significantly, this evolution must be underpinned by clearly-identified policy objectives that can be implemented in the long term. Once these objectives are clear, a new and future-proof set of regulations must be

formulated to deliver these aims (while also protecting competition and consumers) before the ability of broadcasters to meet these objectives is impaired.

What should broadcast regulation look like going forward? Is a transition regime required to protect current players?

Given the faster-than-anticipated migration from traditional broadcasting channels to IP, as well as the potential need to avoid waiting too long and letting the market dictate outcomes that may not be acceptable, two key questions (and associated concerns) should be addressed in the short term.

Would a balanced approach to levelling the playing field provide a long-term solution?

How will long-term policies and regulation shape the future of video and TV markets worldwide in the face of IP migration?

- Should regulation be levelled down long term, or levelled up? Which content policies, economic regulations and obligations will still be required in the future?
- Will there be enough (sustainably produced) domestic content? Will the public needs be met, (for example, for news content and universal content) in the face of an increasingly fragmented market?
- Which content policies, economic regulations and obligations should continue to be imposed on existing broadcasters, and which should be relaxed? Will there be enough diversity and pluralism provided by the market?
- Will it be possible to migrate all TV online or will 'traditional' broadcast technology still be required in the future to meet policy objectives?

Is a transition framework required to protect broadcasters from the risks that we have highlighted in our transportation example?

To the extent that existing regulations and obligations on traditional broadcasters are still desirable in the long term, is there a need to consider a transition regime to protect current players in

relation to their current obligations and tradable assets?

- Similarly to the transport industry example described above, the traditional broadcasting industry has developed some long-term tradeable assets around, for example, traditional broadcast obligations that could be at risk in the future. New TV over IP-based competition will increasingly put pressure on traditional broadcasting commercial revenue, which in turn is likely to put pressure on the value of regulated broadcasting assets. Regulators might need to consider a transition regime to avoid a similar situation to that of licenced yellow cabs.

In the transport sector, it may have been difficult to predict the popularity of Uber, and thus the incentive by policy makers to 'wait and see' was powerful when Uber first was introduced. However, the success of video and TV over IP is now not hard to predict. Policy makers should begin to outline which policy objectives are most important to maintain in order to ensure a smooth transition to a digitally dominated video and TV ecosystem in the not-too-distant future and start acting accordingly now.

Analysys Mason has broad experience in the audiovisual, telecoms and digital sectors. We work with regulators and policy makers and players in audiovisual and telecoms regulatory, policy and competition issues, all of which are increasingly considered in relation to digital distribution (obligations, access, prominence, territoriality, copyright and piracy).

Questions?

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¹ Globalisation of the Danish Media Industry. Studies of international players' impact on the Danish media market, Danish media providers and Danish media content. Danish Ministry, June 2017

² For further details, see Lluís Borrell's presentation from the IBC2017 Conference: Platform Futures Stream: Is IP really having an impact on broadcasting. Available at: <http://www.analysismason.com/About-Us/News/Events/ibc2017-conference>

³ For further details about the survey, see Lluís Borrell's LinkedIn posting: <https://www.linkedin.com/feed/update/urn:li:activity:631550976855368449>.

⁴ New York Times (New York, NY, 10 September 2017), Taxi Medallions, Once a Safe Investment, Now Drag Owners Into Debt. Available at: <https://www.nytimes.com/2017/09/10/nyregion/new-york-taxi-medallions-uber.html>.

⁵ Transport for London (London, 22 September 2017), Licensing decision on Uber London Limited. Available at: <https://tfl.gov.uk/info-for/media/press-releases/2017/september/licensing-decision-on-uber-london-limited>.

⁶ Guardian (London, 23 September 2017), Uber stripped of London licence due to lack of corporate responsibility. Available at: <https://www.theguardian.com/technology/2017/sep/22/uber-licence-transport-for-london-tfl>.

Connected Europe: building the gigabit society



Questions?

Please feel free to contact Matt Yardley, Partner, Consulting, at matt.yardley@analysismason.com

This collection of articles covers a range of topics relevant to building the gigabit society in Europe.

First, we look at the costs of delivering different connectivity targets across Europe, an analysis we undertook for the European Commission last year which helped shape policy makers' thinking on this matter.

Next, we turn to the demand side and one of the critical issues associated with financing the very large investments needed in European infrastructure, namely the rate of FTTH activation, with a specific focus on the experiences in France.

Then we provide a summary of some new work we have just published in the UK on lowering barriers to infrastructure deployments, with 19 firm recommendations for operators, regulators and governments.

We then switch attention to 5G, starting with a spectrum roadmap, highlighting a number of issues to be overcome if 5G is to deliver on its promise. We also discuss how fixed, mobile and potentially utility networks could share resources more effectively to deliver better market outcomes.

We close with an article about a new technology, blockchain, which over the longer term may have a far-reaching impact on our industry and others.

As a sector-specialist in telecoms, media and technology, Analysys Mason is active advising clients across Europe on the above topics. Our clients include operators, investors, regulators and governments, and increasingly our advisory work is becoming gigabit-focused

In summary, the articles include topics on:

- The commercial challenges of delivering the gigabit society
- Annual FTTH activation rate
- Unlocking future investment in fibre and mobile
- A spectrum roadmap towards 5G
- 5G viability
- Blockchain technology.

Download now at:

<http://www.analysismason.com/Research/Content/Reports/connected-europe-building-the-gigabit-society/>

Analysys Mason study for the Australian Communications and Media Authority (ACMA)



Analysys Mason was commissioned by the ACMA to conduct research on international best practice for spectrum management and its implications for improving spectrum management in Australia. This research is informing the ACMA as they prepare to implement the recommendations of the Spectrum Review. The report highlighted the following overseas developments:

- more sophisticated approaches to valuing spectrum
- real-time dynamic spectrum access technologies to support spectrum-sharing
- tiered spectrum use, noting pricing and quality-of-service implications
- increased sharing to meet increasing spectrum demand

Questions?

Please feel free to contact Janette Stewart, Principal, at janette.stewart@analysismason.com



The full report is available at:

<http://www.acma.gov.au/theACMA/international-best-practice-for-spectrum-management>

Analysys Mason's consulting and research are uniquely positioned

Analysys Mason is a global consulting and research firm, specialising in telecoms, media and technology (TMT). Since 1985, Analysys Mason has played an influential role in key industry milestones and has helped clients through major shifts in the market. We continue to be at the forefront of developments in the digital economy and are advising clients on new business strategies to address disruptive technologies.

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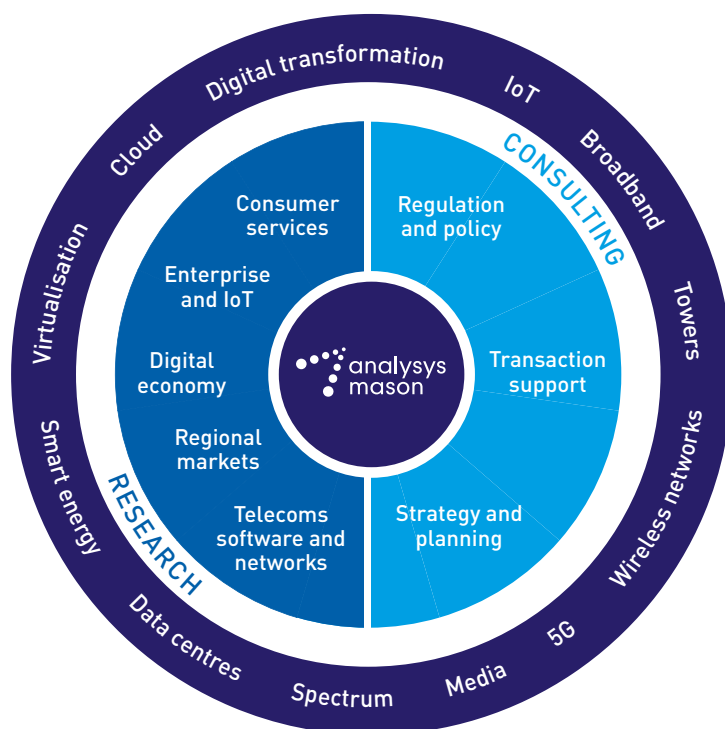
At Analysys Mason, we understand that clients in the TMT industry operate in dynamic markets where change is constant. Our consulting and research has helped shape clients' understanding of the future so that they can thrive in these demanding conditions.

CONSULTING

- We deliver tangible benefits to clients across the telecoms industry, including 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 analyst team tracks and forecasts the fixed and mobile services accessed by consumers and enterprises.
- We offer detailed insight into the software, infrastructure and technology that deliver those services.
- Clients benefit from regular and timely intelligence, and direct access to analysts.



“Analysys Mason is a global consulting and research firm, specialising in telecoms, media and technology (TMT). Since 1985, Analysys Mason has played an influential role in key industry milestones and has helped clients through major shifts in the market. We continue to be at the forefront of developments in the digital economy and are advising clients on new business strategies to address disruptive technologies.”

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