CMS Network Sharing 3.0

Infrastructure sharing and investment 2017

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Foreword

CMS is delighted to be presenting this third edition of its study on the sharing of telecommunication networks in the EU and selected territories around the world. The first edition was highly influential and received a great deal of interest; the second edition added further depth to our analysis, covered several more countries and was also widely quoted and referred to.

This third edition expands in scope again. Firstly, our growing network of offices has allowed us to consider local developments in a greater number of territories than before. Secondly, we now consider the broader gamut of telecommunications-related cooperation and deals; this reflects the wide range of cooperation visible in a world where fixed – mobile convergence is a reality.

This is particularly important in the context of 5G, which is on a trajectory to become the first telecommunications standard that traverses both the existing 'fixed' and 'mobile' infrastructure worlds. It is striking that while 5G has received little mention with respect to many of the transactions covered by this report, operators' strategic repositioning is unmistakable as they prepare to implement a very expensive, network-dense technology with an unclear business case.

Against this backdrop of change, viable commercial and legal structures are essential, as is clear regulatory guidance. We hope that this study proves to be a valuable resource in considering those objectives.

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Introduction

In 2014 and 2016, we published sequential studies into the main characteristics of network sharing deals concluded during the calendar years 2013 to 2015. The reports were very well received, including by the European Commission which asked us to consider in greater detail certain aspects of network sharing deals, in particular any varying geographic coverage of deals across countries.

Observing the expected 'saturation' of classic mobile network sharing deals, we have decided to expand and slightly amend the scope of our study for this edition. As operators position themselves to prepare for the roll-out of the next generation of mobile and wireless technology, we were interested in capturing a broader set of transactions, including how operators were deciding to manage different classes of infrastructure assets.

The study also has a wider geographic scope to reflect the broadening footprint of our network and communications sector expertise.

It is interesting still to see a significant number of the 'classic' type of mobile network sharing transactions which we reviewed in our previous studies (both in terms of new transactions and extensions of existing ones). Such models are proving attractive in emerging markets, but we have also observed new deals in mature Western European markets.

A substantial number of these transactions relate to 4G and there are already a few which relate to 5G. The substantial roll-out costs of these newer technologies, compared to 2G and 3G, in a context of increasing indebtedness and declining margins for the traditional telco operators, are instrumental in ensuring that network sharing and co-investments continue to have an important role. We expect 5G to further this trend as operators struggle to make out a sure-fire business case for the roll-out of 5G-ready infrastructure.

We have also reviewed transactions relating to the sharing of fixed infrastructure as well as M&A transactions of particular note. We continue to see a significant number of convergence-driven deals and the picture is increasingly one of blurred lines between services and infrastructure, with on the one hand new entrants in infrastructure (such as OTT providers) and on the other telco operators seeking to exit or limit the extent to which they retain ownership of all infrastructure assets. We noted in our last study that financial investors have appetite for steady but low-return infrastructure assets. With the emergence of multi-utility infrastructure funders, owners or providers, we expect to see this trend continue.

Regulatory scrutiny has intensified, particularly in respect of mergers, although we have also seen antitrust investigations of sharing arangements in the period covered by this study. This does not however alter our main message which is that network sharing transactions are probably easier to navigate through the regulatory process than M&A in a context of increasing consolidation.

In light of all of the above, we do not expect that this edition of the study will be the last.

We hope that this third study will be helpful to those reviewing and analysing this innovative sector of a market undergoing rapid change.

If you would like to discuss any aspect of this study, do get in touch with your country contact listed at the back of the report.

Overview of telecoms deals in 2016 and 2017

The current context

It is no secret that 5G will require unprecedented capital investment from telco operators compared to previous generations of communications technology. The European Commission has called for an investment of approximately EUR 50 billion per annum over the next 10 years. And yet the industry has been facing a steady decline of ARPU for several years as well as retail and roaming price controls. The main operators in Europe are also still indebted as a result of past capital expenditure (e.g. for 4G spectrum and roll-out, and fibre networks).

The infrastructure game

In this context, operators face the challenge of managing different telco asset classes in order to maximise revenue and future-proof investments. Our study shows that operators are adopting a variety of strategies in order to tackle this challenge.

Finance

As telco transactions get larger and more complex, the question of how they are financed becomes increasingly relevant. In the last year, we have seen debt in transactions in three main areas:

— funding M&A in the consolidating market, in particular because valuations are relatively high and there is a lot of liquidity in the debt markets;

— funding infrastructure projects, ranging from FTTH projects through to increasing the range of high latency rings;

— funding network sharing and other partnership-type transactions, as funders aim to structure transactions to take advantage of the credit rating of both or all parties in the most efficient ways.

These have combined with trends in the debt markets:

— deep pools of capital available, from direct (i.e. not bank) lenders in Europe and the US as well as continued support for the industry from traditional bank lenders in the sector;

— an increasing confidence in the sector among lenders, based on the fact that the sector provides a combination of tangible and intangible assets for security packages and in combination of contracted and one-off revenues to support financial models;

— a familiarity with the jurisdictions which have been involved in cross-border financings, and resulting improvement in the speed and cost of execution of those transactions.

In the next two years, we expect to see:

— a couple of lenders notably increase their market share, by following the largest opportunities in the market;

— more vendor financing and other forms of financial partnerships, as businesses look to develop both their customer base and their exposure to the financial benefits of these transactions;

— more appetite for infrastructure financing, driven by businesses taking advantage of regulatory opportunities to extend networks.

5G

In the context of a never ending barrage of 5G commentary and overstated claims focusing on end-user possibilities, it is important that the likely chances of success of the investment models proposed be continuously validated in the real world.

If one thing is becoming clear, it is that traditional models of telecommunications infrastructure investment and provision may not be plausible or appropriate to support 5G rollout. Driving ARPU through identification, refinement and astute targeting of end-user use cases is unlikely to provide a completely reliable means of justifying the necessary investment. This may be true even at an aggregated level – thus, ruling out network sharing as a magical solution for the quandary.

Where then does the value actually lie with 5G investment?

One key constant is the ability to collect previously impossible amounts of precise, user-specific and real-time data. In an 'always and everything' connected world, the ability for such collated data to flow back up and inform and improve the source of commodity generation will be invaluable. For example, power consumption data from a city of users could be used to dynamically optimise the generation and transmission of electricity at its source.

The true value for 5G may therefore sit not with the consumer use cases, but rather at a civil infrastructure level. If this is right, would operators be better advised focusing cases for investment upon governments and other central bodies charged with investing in and

maintaining such civil infrastructure? And can the end-to-end technology be created and developed to deliver these outcomes?

An uncertain regulatory context

Operators have long bemoaned the uncertain regulatory context, and in particular regulators' reluctance to promise favourable regulatory treatment (in the form of holidays or forbearance) in exchange for a commitment to invest in upgrading infrastructure. Such concerns have grown in importance against the backdrop of a difficult business case for the roll-out of 5G.

This debate is currently taking centre stage at EU level as the European Parliament considers the European Commission's proposal to allow regulatory relief for very high capacity networks deployed under co-investment under its legislative proposal for a European Electronic Communications Code. The European Parliament is concerned about this aspect of the proposal. It is also concerned about the lack of regulation of 'oligopolies', which currently fall outside the scope of regulatory obligations and which has already exercised BEREC, the Body of European Regulators. The European Parliament's position is likely to sit very uncomfortably with calls for more investment for the roll-out of 5G and investors have recently warned that this is a certain path to leave Europe behind Asia and the US which are investing heavily in future technology. We review regulatory developments at pages 17-19 of this report.

Key trends in the transactions reviewed

Types of transactions

As with our previous editions in 2014 and 2016, the mobile network sharing deals identified in this study include both new transactions and extensions of existing agreements, to the extent that these have been publicised. This study covers the period from January 2016 to July 2017 (although we have included or referred to earlier or more recent developments if these are particularly interesting or relevant).

As well as mobile network sharing deals, this study captures fixed infrastructure sharing deals, and general M&A transactions, where these seemed of particular note. Our intention is to track industry developments in both these areas ahead of the roll-out of the next generation of technology.

Our data covers a total of 26 countries, mainly in Europe but also in Asia and, for the first time, Latin America. We have identified a number of key themes in the transactions captured in this study which are explored below. We provide further commentary in the following sections of this report: in respect of fixed and mobile network sharing on pages 8-13 and as regards M&A on pages 14-16.

Consolidation continues

There has been an undercurrent of consolidation in the telecommunications sector in recent years, particularly in Europe. This trend has continued in 2016-2017, notwithstanding the expanded geographic scope of this study. A variety of rationales drive these transactions and we comment further on page 16: convergence and strategic re-positioning are recurring themes.

Positioning for the future: disposal and/or outsourcing

Given the current context, operators are rationalising operations and streamlining their businesses. In this respect, our study has identified a number of transactions in which operators are disposing of legacy or other network assets in a bid to refocus their business. One example is the structural and voluntary separation of **O2 Czech Republic** into two companies, **CETIN** which owns and operates the legacy network infrastructure, and **O2** which focuses on consumer facing services, spectrum and content. Mirroring trends seen in the U.S. we have also noted a number of transactions involving the sale of sites / towers. Spain's **Cellnex** is a recurring party to such transactions, which means it is likely to be in a strong strategic position when sites become critical to the roll-out of 5G.

Multi-faceted convergence

Convergence is still a key driver for many of the (M&A) transactions reviewed and it wears many colours. Fixed-mobile convergence continues, and we have seen a number of transactions enabling telco operators to boost their content offering, all driving towards the bundling of mass 'multi-play' services. See for example our case study on **TIM / Canal+** on page 7.

Facebook and **Microsoft's** investment in the **Marea** subsea cable (see case study on page 10) is another aspect of convergence, albeit of a distinctly different nature: OTT providers investing in infrastructure to ensure quality provision essential to their service offering.

Antitrust scrutiny intensifies

As we identified in our previous study, competition regulators have been scrutinising mergers increasingly closely and this trend has continued. A striking example is the European Commission's decision to block the merger between **O2** and **Three** in the UK. The Commission has also cleared transactions with remedies

in a number of jurisdictions (e.g. Belgium, The Netherlands and Italy). These remedies typically include divestment of assets to support (entry of) an MNO or MVNO and maintain a competitive market.

This level of scrutiny is unsurprising in a context of consolidation and increasingly concentrated markets. We found in our previous study that mergers were comparatively difficult to pilot through the regulatory and/or competition approval process than other strategic options such as network sharing.

That said, competition authorities are also scrutinising network sharing arrangements. In the period covered by this study, the European Commission has opened an investigation into the network sharing agreement between **O2** and **T-Mobile** in Czech Republic. The Italian competition authority has opened an investigation into the JV set up between **Fastweb** and **TIM**.

The emergence of multi-utility infrastructure providers?

We note a small number of transactions involving telco operators and utility providers (e.g. **Deutsche Telekom/ Innogy**) and we also have experience of advising different utility provides sharing infrastructure in transactions which have not been publicised. In a context of increasingly commoditised infrastructure, of willing investors and of telco operators under pressure to reduce indebtedness, it is perhaps surprising that there have not been more such deals. It is a trend we expect to see continue in the near future. Interestingly, there was no evidence that the EU's Broadband Cost Reduction Directive, which requires physical utility infrastructure to be shared, has had any influence on these deals.

Zero-rating: an increasingly hot topic

Zero-rating has already attracted the scrutiny of the European Commission. This is the practice of MNOs, MVNOs or ISPs excluding from data allowance caps traffic on their networks for certain services or applications. It is a growing practice which is likely to become influential in an increasingly converged world. As well as general net neutrality concerns, it has the potential to raise antitrust issues. That said, the Commission concluded in a report published earlier this year that, absent market power, zero-rating was unlikely in and of itself to raise competition issues. Taking a similar approach, the German regulator has for instance given the green light to **Vodafone** and **Deutsche Telekom's** zero-rating tariff. However, with OTT service providers pondering investment in infrastructure, and telco operators boosting their content offering, it is an issue we expect to see more of in coming years.

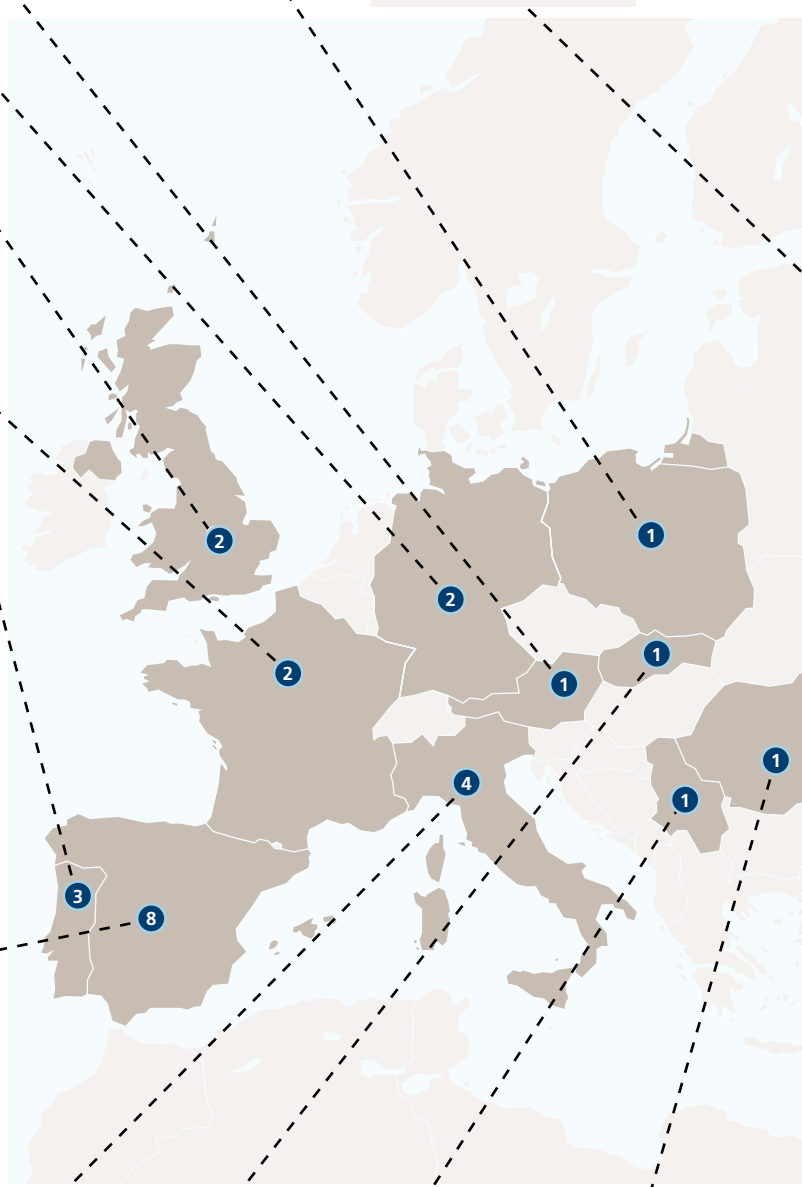
Case study: TIM/Canal+

In October 2017 Telecom Italia (TIM) and Vivendi's pay TV arm, Canal+, inked a joint venture to strengthen their hands in the intensifying 'content wars'. The objective is to allow both Canal+ and TIM to drive a better bargain in bidding for video content against rivals Netflix and Amazon.

The rapid pace of convergence between connectivity and content markets is illustrated by the fact that securing content is now seen as crucial to drive consumer fixed and mobile subscriptions. At the time of our last network sharing study, the impact of media companies in the telco segment had barely been felt, but it is becoming clear that even as a small group of competitors offering 'quad play' services begins to emerge in each national market, the game has already begun to move on. The competitive advantage over the next few years looks likely to gravitate towards competitors who are not only quad-play connectivity providers, but who also have greater control over the content that they distribute.

Fixed and mobile network sharing deals, 2016–2017[1]

On this map, fixed network sharing mobile deals are shown in blue boxes and network sharing deals in brown boxes.



Poland (4G)
Orange, T-Mobile

Russia (4G)
VimpelCom, Megafon

Russia (2G 3G 4G)
Tele2, VimpelCom

Austria
A1 Telekom, T-Mobile

Germany
1&1, M-net

Germany
Deutsche Telekom, innogy

UK
CityFibre, Vodafone

UK
CityFibre, Gigaclear

France
Orange, SNCF Réseau

France (2G 3G)
Free, Orange, Bouygues, SFR

Portugal
NOS, Vodafone

Portugal (4G)
T-Mobile, Orange

Spain
MásMóvil Ibericom, Orange (two deals)

Portugal (4G)
T-Mobile, Orange

Spain
Vodafone, Telefonica

Spain (2G 3G 4G)
MásMóvil, Orange

Spain
Orange, Telefonica

Spain (4G)
Movistar, MásMóvil (Yoigo and Pepephone subsidiaries)

Spain
Orange, Euskatel

Spain (3G 4G)
Movistar, Aire Networks

Italy (4G)
FastWeb, Tiscali

Italy
TIM, Fastweb

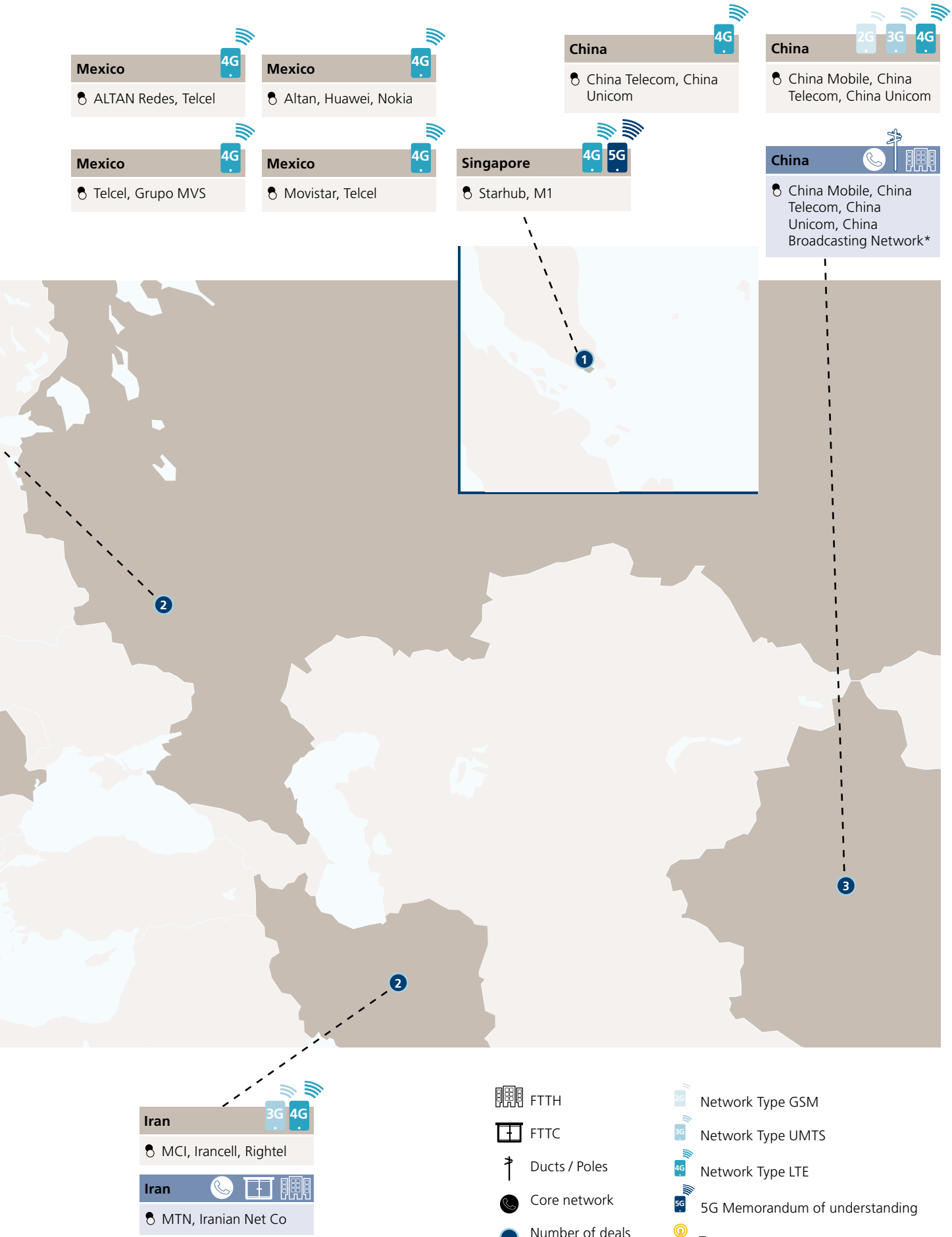
Slovakia (2G)
Orange, SWAN Mobile

Italy
Wind Tre, Open Fiber

Italy (2G 3G 4G)
Iliad, Wind Tre

Serbia (4G)
Telenor, VIP mobile

Romania (4G)
Orange, Vodafone



[1] Some of the transactions included in this study are outside the January 2016 to summer 2017 time period but have been included where of particular interest or relevance. Please also refer to the case study boxes set out in this report.

Commentary on network sharing deals

Comparison of deal locations

Territory	Number of sharing deals
Spain	8
Italy	4
Mexico	4
China	3
Portugal	3
Germany	2
Iran	2
Russia	2
United Kingdom	2
Austria	1
Poland	1
Romania	1
Serbia	1
Singapore	1
Slovakia	1

It can be seen that the most intense deal activity during the period covered by our study has been in Spain, which is arguably the country furthest along the path to quad-play convergence. In that environment, several of the deals we have observed link to MásMóvil consolidating its position as a fourth national converged player. In Mexico, as we describe in the country section below, much of the activity observed relates to the Mexican Government's efforts to break open telecoms markets to competitors of Telcel. Italy is rapidly moving towards a quad-play environment and the deal flow observed reflects that.

Case study: the Marea Cable

In September 2017, **Microsoft**, **Facebook** and the Spanish fixed operator, **Telxius**, announced completion of the construction of the highest-capacity sub-sea cable to ever cross the Atlantic (160Tbps), running from Virginia Beach in the United States to Bilbao in Spain. Microsoft and Facebook will self-utilise the bulk of Marea's capacity as dark fibre, with Telxius wholesaling the remainder on an open-access basis to third parties.

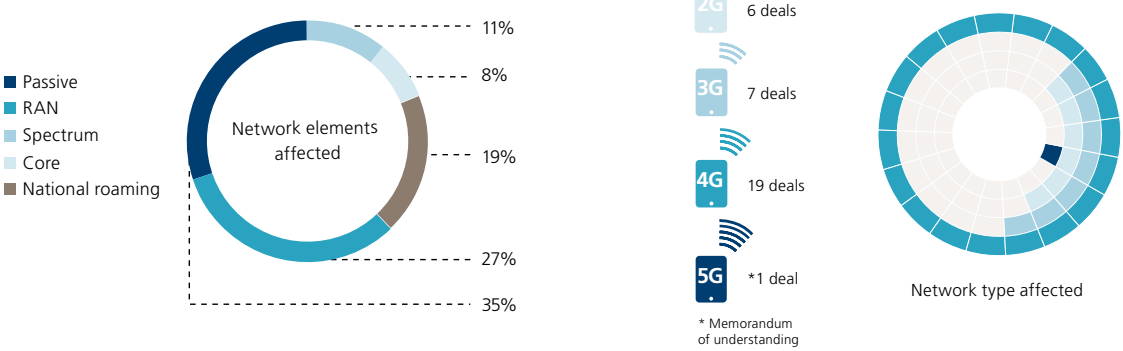
This is but one prominent example of an increasing trend of the largest tech companies taking their own control over the gigantic volumes of data that they now move between cloud-based data centres around the globe. This means that a rapidly-increasing share of traffic is now within private networks operated by the biggest international players such as Microsoft, Google, Amazon and Facebook.

Self-developing network architecture makes operations for tech companies more efficient. However, will this deprive traditional telcos of significant future revenue streams that they might otherwise rely on to cross-subsidise consumer and SME services?

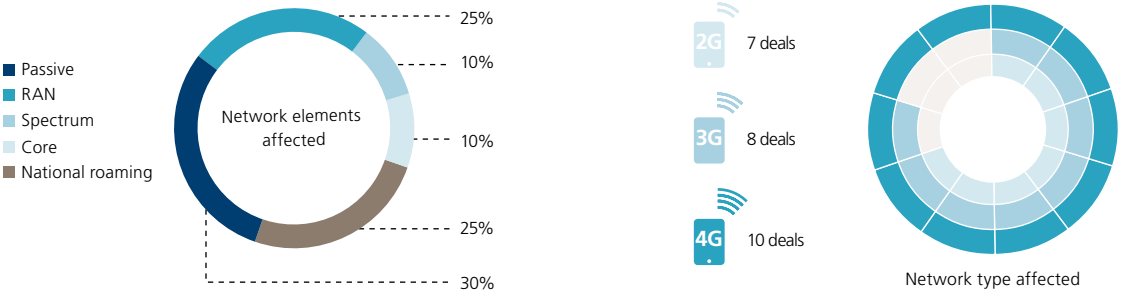
Mobile network sharing deals

In our first column we compare the elements of the network that are shared between the parties to the transactions reviewed in this study. In our second column we compare which generation network (2G–5G) the network sharing deal affects. In both cases we compare the data against our previous studies.

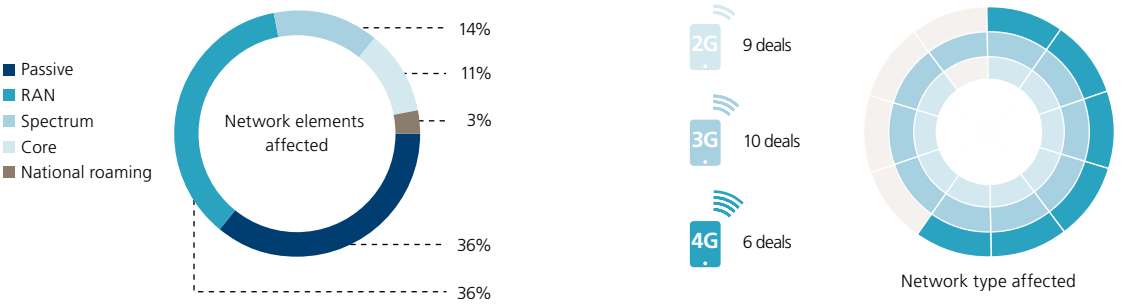
2016-2017



2014–2015



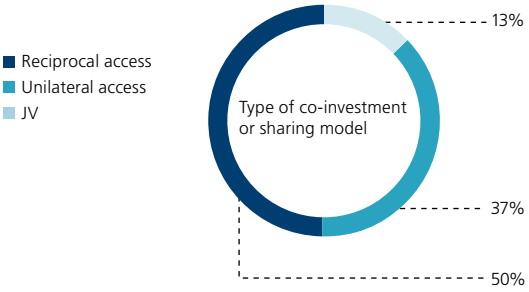
2013



Sharing of:	Means:
Passive elements	Sharing of those parts of the access network that serve the active, also called 'radio access' network elements (which make use of radio interface). These include sharing of masts, towers, sites, cabinet, or even power or air conditioning.
Active, or radio access network (RAN) elements	Sharing of antennae and devices that connect to such antennae, including base stations, NodeB and eNodeB units etc. (names of devices are technology specific, and are of little practical importance in this study).
Spectrum	Radio spectrum used to access only terminal equipment.
Core network elements	Sharing of different elements outside the access network of a mobile operator, including core elements of 4G networks such as MME (Mobility Management Entity), SGW (Serving Gateway), or transmission rings or backhaul facilities, or logical elements (e.g. billing/VAS).
National roaming	Traditionally viewed as network sharing. Here, subscriber traffic from the served areas is served by one operator (the host) by routing this traffic to the guest operator, handing it over to the latter at certain central points of exchange, and then routing back traffic to the user the same way. In this case, the guest operator is using the host operator's network as a complete access network for the roaming sites and for routing traffic to and from that place.

Fixed network sharing deals

The charts below show the type of co-investment or sharing model adopted by the parties to the transactions we have reviewed.



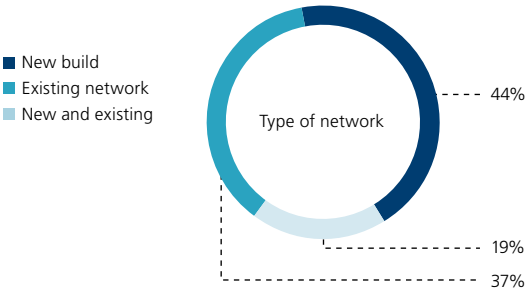
There are a variety of cooperation models that operators can adopt. For our study, and in line with existing literature, we have grouped the transactions reviewed into three broad categories:

— **JV:** this consists of the creation of a corporate vehicle jointly set up and/or controlled by the parties.

— **Unilateral access:** under this model, only one party provides access to its network.

— **Reciprocal access:** both parties provide each other with access to their respective networks on a reciprocal basis.

We have also considered whether the fixed network sharing agreement relate to newly-built network, existing network or a combination of both.

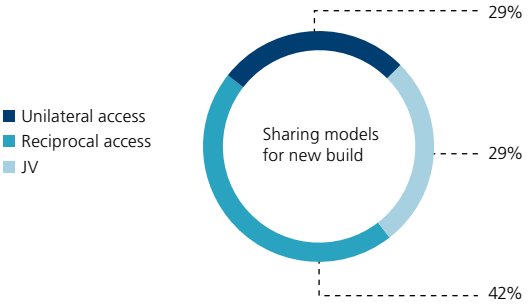


In this chart the transactions relating to new build include both new-build which the parties had already committed to rolling out, separately from the transaction, as well as new-build to be rolled-out as part of the network sharing agreement.

The transactions that we reviewed also included cooperation based on access to a mix of new and existing networks.

A striking and interesting example of the variety of cooperation options available is the agreement between **Fastweb** and **Tiscali** in Italy, which includes both sharing of fixed and mobile infrastructure.

We have considered in the chart below the sharing models adopted in respect of newly-built network infrastructure. This includes strictly new-build and transactions which involve sharing a combination of new build as well as existing network.



This chart shows an unsurprising prevalence of reciprocal access models, which are an effective means of risk-sharing for operators. Approximately 30% of the transactions reviewed took place in Spain, a well-established leading jurisdiction for co-investment and risk-sharing models, and (possibly as a result) strong investment in FTTH deployment.

In our study, we have taken the following approach:

Sharing of:	Means:
Core	Core network infrastructure including fibre backbone.
FTTH / FTTC	Local access infrastructure either to the cabinet (FTTC) or direct to the home or premises (FTTH), including passive elements such as ducts, poles or dark fibre.

Case study: Vodafone/CityFibre

A relatively low proportion of the UK's fixed fibre access infrastructure is operated by players other than the incumbent, BT. Fierce price competition has reduced the scope for significant competing network investments; furthermore, an aggressive SMP regulatory regime has made it cost-effective for fixed services to offer consumer connections on a wholesale basis from BT via LLU and VULA. BT may also be obliged to make dark fibre available for certain services in the future.

However, perceived poor service quality in recent years from BT's open-access infrastructure arm, coupled with BT's decision to defer large-scale FTTH roll-out in favour of G-Fast, has left BT's competitors and consumers seeking alternatives.

Taking advantage of this demand, a number of UK operators are at last starting to construct their own consumer-focussed fixed fibre infrastructure. In November 2017, Vodafone and CityFibre announced a plan to roll out FTTH to up to 5m British households – with the intention to extend this cooperation if it is successful. It will be interesting to see whether BT will accelerate its own FTTH roll-out to avoid being left behind in the years to come.

Notable M&A deals in 2016-2017[2]

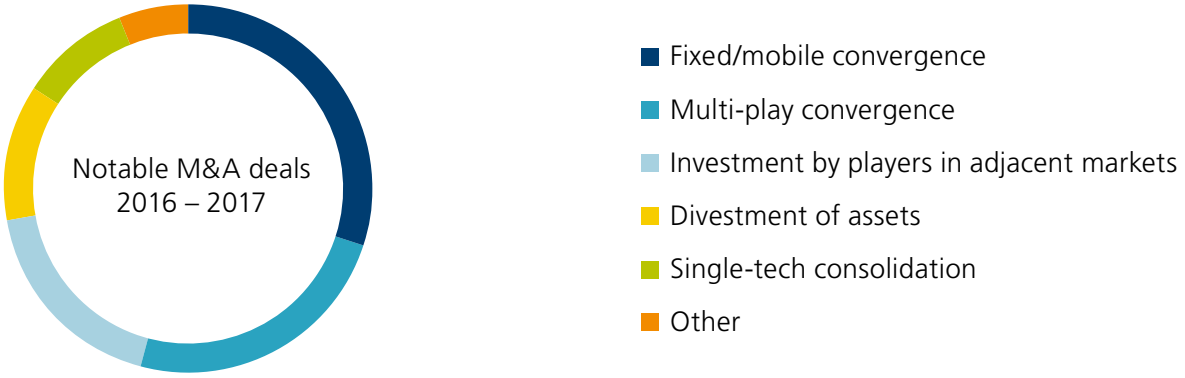
Territory	Participants	Why of interest
Austria	Hutchison Drei, Tele2	MNO acquiring a leading business broadband operator. Now second largest converged communications player in Austria, offering fixed line, internet and mobile.
Belgium	Telenet, Coditel Brabant (trading as SFR BeLux)	Owner of the MNO BASE bought SFR BeLux to add fixed subscribers in Brussels and part of Wallonia and Luxembourg. Now offers mobile, fixed and TV.
	Telenet, MEDIALAAN	Telenet acquired BASE; on condition of divesting customers to MEDIALAAN, the FlemishTV and radio broadcaster. MEDIALAAN's long-term network access is supported by MVNO deal.
China	China Unicom	Public-private partnership. China Unicom raised RMB 77.9bn for investment thanks to investment from more than 10 large investors, mostly in the internet space, including Alibaba, Tencent, Baidu, Suning and JD.
Czech Republic	O2 Czech Republic, China Telecom Europe	International cooperation deal with respect to data roaming, data centre services, international connectivity, public sector IT development, e-government and smart solutions.
	O2 Czech Republic, CETIN	O2's disposal of legacy network infrastructure and outsourcing of network to a new company, CETIN, as a result of voluntary separation. CETIN is now free to seek other customers alongside O2.
	Air Telecom, Nordic Telecom	Strategic merger, coupled with winning bid for spectrum in 5G auction, to create fourth Czech mobile operator.
France	Groupe News Participations, SFR Group	SFR, owned by Altice, taking sole control of GNP. Will facilitate end-to-end, multi-play convergence including TV.
Germany	United Internet, Drillisch	Strategic move to become fourth integrated national player by combining fixed and mobile businesses.
Hungary	China CEE Investment Cooperation Fund, Invitel	Significant regulatory scrutiny due to sale of Invitel to Chinese buyer.
	Invitel, DIGI Communications	Invitel selling consumer/SME fixed business to Digi, an integrated TV, telecoms and internet provider. The strategy of Invitel's new Chinese owner focusses on corporate IT/ telco infrastructure. Subject to regulatory approval.
Italy	Vivendi Canal+, TIM	Strategic content-buying JV to allow more competitive offers in Italy of fibre connectivity + TV.
The Netherlands	Vodafone, T-Mobile	T-Mobile purchasing Vodafone's fixed line business to become a quad-play operator. Vodafone selling as part of remedies on Ziggo deal.
	Vodafone, Ziggo	50-50 JV to create a company offering TV, broadband, fixed, mobile and B2B services.
	Youfone, Mobicross	Acquisition of Mobicross gives Youfone access to fixed customer base to sell its OTT TV.

Peru	Inka Cell, Virgin Mobile	Inkacell becomes MVNO by buying Virgin Mobile.
	GTD, Netline Peru	GTD (Chile) buying Peruvian fixed assets (B2B-focussed).
Poland	Liberty Global (UPC Polska), Multimedia Polska	Merger of #2 and #3 Polish cable TV operators. Subject to regulatory approval.
Romania	RCS, RDS (DIGI)	25% float of 'DIGI' Pay TV platform.
	Direct One, NetCity	Consolidation of two Bucharest fibre operators; creating common network open to third parties.
Serbia	SBB, IKOM	Merger of 2nd largest Serbian ISP (27%) with third largest ISP (4%).
Singapore	Singtel, Netlink NBN Trust	IPO of 75.01% of NetLink, Singapore's principal broadband infrastructure provider, following order by Singapore regulator.
Slovenia	Telekom Slovenjie, Debitel and IZI Mobile.	Acquisitions by fixed incumbent of two MVNOs.
	Telemach, Total TV	Telemach, an MNO, acquires Total TV, the largest DTH provider in the region.
	Si.mobil, Amis	Telekom Austria merging its MNO, Si.mobile with the fixed, broadband and IPTV operator, Amis, re-branding itself A1.
Spain	Euskaltel, Telecable de Asturias	By bolting on Telecable, Euskatel (the largest Basque cable operator) acquired a leading cable presence in Austurias. It had already acquired a leading presence in Galicia following the acquisition of Cable & Communicaciones Galica. Euskatel is now a key converged provider of fixed voice, broadband and Pay TV across Northern Spain.
	Másmovil, Pepephone	Masmovil consolidates as fourth national converged player by bolting on white label MVNO.
	Másmovil, Xfera (trading as Yoigo)	Masmovil consolidates as fourth national converged player by bolting on MVNO.
Switzerland	Sunrise, Cellnex	Sale by Sunrise to Cellnex of passive network infrastructure, principally 2,200 towers.
	UPC, e-fon	Acquisition by fixed-voice, broadband and Pay TV operator of the 51% of shares it did not already own in a business-focussed ISP.
UK	Virgin Media, Arqiva	Acquisition of Arqiva wifi sites by Virgin Media, a quad-play converged player.
	Three, UK Broadband	MNO acquiring a geographically-targeted fixed line customer base.
	BT, EE	Acquisition by fixed incumbent of #1 MNO. Deal allows BT to offer mass-market quad-play deals.

[2] Some of the transactions included in this study are outside the January 2016 to summer 2017 time period but have been included where of particular interest or relevance. Please also refer to the case study boxes set out in this report.

Commentary on selected M&A transactions

We have analysed the principal rationale for each of the 31 notable deals identified in our study. While not seeking to carry out a comprehensive exercise, the deals that we have observed reveal some interesting themes. These are shown in the chart below.



Convergence

Entirely unsurprisingly, convergence is the key M&A trend that we have observed. Nine deals relate to straightforward fixed/mobile convergence, usually as a result of an MNO or MVNO acquiring fixed customers to whom it can sell integrated connectivity packages.

A further nine of the deals concern 'multi-play' convergence, where other services (usually TV) also come into play. It seems that as all providers battle for pre-eminence in the new converged world, each piece of infrastructure which brings operators closer to customers is valuable. For example, in the UK, **Virgin Media** owns an MVNO mobile network, plus the UK's most extensive cable network, yet still saw a further advantage in offering customers more WiFi hotspots, by buying a network from Arqiva. In Belgium, the bringing together of the **BASE** MNO with **SFR's** broadband network, led to a divestment of broadband assets to **MEDIALAAN**, to construct a triple play MVNO, broadband and TV offering.

Passive asset divestments

A consequence of an environment increasingly receptive to network-sharing may be a loss of interest by certain operators in self-owning critical infrastructure. For example, in Czechia in 2015, passive infrastructure used by O2 was spun off into **CETIN**, an entirely separate company. The intention was to realise value by allowing O2 to function as a lighter, more nimble company with lower working capital requirements that was better able to respond to consumer trends. By contrast, CETIN has evolved into a low-risk, low-return revenue generator, ideal for long-term investors. **Sunrise**, a Swiss MNO, has also sold 2,200 towers to **Cellnex**. We expect to see more of these types of deal quite independently of regulatory requirements, as a model built around shared passive infrastructure, but competition differentiated on quality, proves its effectiveness and matures.

Single tech consolidation

Despite the pace of cross-technology convergence, we continue to see a steady stream of single-infrastructure combinations, particularly to build increasingly large blocks of continuous fibre coverage (e.g. **Euskatel** in North Spain) or larger mobile networks with a deeper customer base (**Masmovil's** acquisition of **Yoigo** and **Pepephone**). At least part of the explanation for this is likely to be the desire to become a bigger, more attractive merger partner ahead of the time when an operator of a different technology seeks to build a triple or quad-play customer offering.

Chinese investment

A reasonably small trend at the moment, but we think likely to become a larger one, is the acquisition of European telecoms assets by Chinese investment vehicles, such as of **Invitel** in Hungary. This is presently more prevalent in Eastern Europe, where FDI is particularly welcome and ties in with programmes such as the Chinese 16+1 investment initiative. It remains to be seen whether the European Commission's planned foreign investment review mechanism will slow the flow of such deals.

Investment from adjacent markets

The **Marea Cable** is only one example of investments in telco assets by players in either adjacent, or customer markets to help safeguard their own long-term interests. We have also seen a number of tech firms invest in **China Unicom**.

Regulatory developments

European Union

In September 2016 the European Commission adopted a strategy on '*Connectivity for a European Gigabit Society*', which sets a vision of Europe where the availability of very high capacity networks underpins the Digital Single Market.

The Commission put forward several policy measures and financial instruments to encourage private and public investments in fast and ultra-fast networks.

This vision relies on three main strategic objectives for 2025:t

- Gigabit connectivity for the main socio-economic drivers;
- Uninterrupted 5G coverage for all urban areas and major terrestrial transport paths; and
- Access to connectivity offering at least 100 Mbps for all European households.

The Commission also launched a series of complementary initiatives to help reach these objectives. This includes a major legislative proposal for a '*European Electronic Communications Code*' (EECC) which updates rules applicable to the telecoms industry in light of technological developments and sets common EU-wide rules and objectives on how the industry should be regulated.

The EECC will contain several provisions relevant to (fixed and/or mobile) network sharing:

- The recitals state explicitly that Member States should promote the shared use of spectrum, which is seen as an efficient use of resources and a means of making additional spectrum resources available.
- Provisions to allow competent authorities to require co-location and sharing of network elements and associated facilities.
- Powers of national regulatory authorities in respect of spectrum assignment and to set conditions related to the sharing of spectrum.
- or wireless infrastructure. The EECC puts the emphasis on obligations such as sharing infrastructure to improve end-users' connectivity especially in less dense areas.
- The EECC introduces regulatory relief to facilitate commercial co-investment in new infrastructures.

The Competition Commissioner has echoed the EECC's emphasis on network or infrastructure sharing. In November 2016 she stated that '*network-sharing can cut the costs of rolling out new networks. It can make it easier to expand into areas that had no coverage before. And it can do all that without harming competition.*'

However, the EECC has encountered difficulties going throughout EU legislative process. Member States have been cautious about the EECC's spectrum proposals, which recently prompted by Robert Viola, the Director General of DG CONNECT, to stress the need for ambitious spectrum reform. As noted on page 6, the proposal for regulatory relief for infrastructure deployed under co-investment is encountering difficulties at the European Parliament.

Other jurisdictions

New guidelines or other regulatory measures relating to network sharing have been introduced across various jurisdictions including: in China (on sharing of telecom infrastructure and spectrum), in France (on mobile network sharing), in Peru (with the issuing of complementary rules to existing laws on mobile public services), in Russia (with amendments to existing legislation meaning sharing of both spectrum and infrastructure are permitted), in Spain (with deregulation of certain sections of the market and a new regulation on use of radio spectrum), in Turkey (on sharing of antenna facilities) and in the UK (with measures imposed on Openreach (currently suspended) on access to dark fibre and proposals in play to strengthen access to its passive infrastructure).

Regulatory developments (continued)

Country	Regulatory measures taken					
	Authority measures introduced or changed in relation to mobile network sharing (2016/17)	Merger clearance decision (2016/17)	Is MNO licensee able to share spectrum with electronic comms provider?	Authority guidelines or decisions on network sharing	Other spectrum regulation	Published, ongoing or announced investigations, inquiries, analyses or studies by regulators (2016/17)
Austria			✓ *	✓		
Belgium				✓		
China	✓		✓*		✓	
Czech Republic			✓			✓ (EU)
France	✓	✓	✓	✓	✓	
Germany			✓**			✓
Hungary				✓		
Iran					✓	✓
Italy			✓ *	✓		✓
Mexico	✓			✓	✓	✓
The Netherlands			✓			✓
Peru	✓		✓ *		✓	
Portugal			✓ *	✓		
Poland			✓ **	✓		✓
Romania				✓		✓
Russia	✓		✓*	✓		
Serbia	✓	✓			✓	
Singapore			✓*	✓		
Slovakia	✓		✓ **	✓	✓	✓
Slovenia			✓*			

	Regulatory measures taken					
Country	Authority measures introduced or changed in relation to mobile network sharing (2016/17)	Merger clearance decision (2016/17)	Is MNO licensee able to share spectrum with electronic comms provider?	Authority guidelines or decisions on network sharing	Other spectrum regulation	Published, ongoing or announced investigations, inquiries, analyses or studies by regulators (2016/17)
Spain	✓	✓	✓ *	✓		✓
Switzerland						✓
Turkey	✓					
UAE			✓ *	✓		
UK	✓	✓	✓(mostly)	✓	✓	✓
Ukraine						

* With prior approval
** But must notify regulatory authority

Spectrum regulations

Sharing of spectrum frequencies ('super RAN sharing') by MNOs has so far tended not to be encouraged for fear of reducing service differentiation (or less nobly, for fear of regulators or Treasuries losing spectrum fee income). However, some territories have relaxed their stances during the period covered by this study, in order to facilitate the roll-out of LTE to low-density, high-cost areas. Examples include Denmark, Hungary, Russia, Hong Kong and Israel.

We expect to see an explosion in broader spectrum sharing over the coming years. This is because in an environment of significantly growing demand for spectrum, all parties increasingly recognise that spectrum sharing needs to be encouraged to make the most effective use of a finite resource.

For example, the same frequency band can be used for different services and different active (radio) equipment where time-separated. In the UK, White Space Devices now use spectrum within bands allocated to TV transmissions. In Turkey in February 2017, Huawei, Qualcomm and Vodafone successfully trialled licence-assisted access ('LAA'). This combined 40MHz of unlicensed spectrum in the 5GHz band with 15MHz of licensed spectrum in the 2.6GHz band to create extra capacity for events (aggregated across three carriers). This co-existed with local wifi, by supporting 'listen before talk' technology.

The considerable work already done on 'Licensed Shared Access' in RSPG, in CEPT / ECC and ETS has concluded that public mobile networks will benefit greatly from these types of shared use of the same spectrum for different purposes. To make these technical possibilities a reality, and to promote innovative approaches to spectrum sharing, regulators are starting to lead efforts to investigate and publicise conditions for sharing spectrum in their own jurisdictions. These initiatives are helping operators to overcome what had previously been one of the biggest hurdles to shared investment.

At EU level, the European Commission's draft Electronic Communications Code ('EECC') seeks to harmonise the allocation of spectrum across Europe, including the circumstances under which the sharing of spectrum should be "fostered", as well as the conditions of authorisations and use of spectrum. This accords with the EU's broader multiannual Connected Continent package and the Radio Spectrum Policy Programme (RSPP 2016 – 2020). However the question is whether the EECC will come into force in time to assist materially with 5G deployment.

Similar initiatives are taking place at national level. The UK's regulator, Ofcom, released its 'Framework for Spectrum Sharing' in April 2016. This seeks to increase consistency and predictability in Ofcom's treatment of sharing deals, with the objective of helping them to happen more frequently and more intensively. Ofcom has also published its Wireless Telegraphy Register to try to facilitate matches between potential shared users of specific spectrum blocks. In Spain, Royal Decree 123/2017 was implemented in February 2017 which seeks to boost the flexibility and efficiency of spectrum usage. It includes measures to better facilitate the transfer and assignment of spectrum, as well as for the mutualisation or pooling of spectrum rights.

Practical tips for telecom deals

Based on our experience in assisting electronic communications operators in relation to network sharing and infrastructure agreements, we note that the entry into such arrangements normally entails: (i) several months of planning, (ii) preparation of detailed business cases, (iii) technical due diligence and (iv) thorough assessments of potential benefits and risks. For this reason, as of the moment when a party has considered the possibility of entering into a network sharing agreement, there are several potential deal stoppers which need to be considered, briefly outlined below.

Know your business case

With many of the recent movers in this space not being shackled with legacy infrastructure and the attendant commercial and operational considerations, a more focused business case may be achievable. However, it is vital that the substance of an operator's business case is not only well-constructed but also well understood by those charged with negotiating the deal. Foresight of the end-to-end dynamics of the arrangement is critical in this regard.

Regulatory considerations

At the very start of the process, any telecom operator will need not only to identify potential regulatory barriers but also to identify all the government authorities that might have a say in relation to the network sharing agreement. If allowed by local law, all relevant authorities need to be approached and engaged in open communication throughout the process. Recognising and planning for dealings with local authorities and access requirements may also be an important step in understanding potential future points of complexity and uncertainty.

Technical and commercial constraints

Internal financial and technical considerations are also an important aspect. In this respect, prior to entering into effective negotiations with another operator, it is essential that an analysis is performed with respect to the interoperability of the two parties' networks. Aspects which should be assessed at the beginning of the negotiation process are, for example, differences in technical equipment, similar locations of infrastructure, high level of investments required or different architectures of the interested parties.

Antitrust risks

One of the major concerns with the negotiation as well as the implementation of a network sharing arrangement is to ensure compliance with competition law provisions. In this respect there are several risks which can arise such as: (i) joint dominance; (ii) exclusion of competitors; (iii) coordination of the behaviour of the parties on the market; and (iv) information sharing. As such risk can often be reduced if access to potentially commercially sensitive information is restricted, competitors often choose either to incorporate a joint venture or to use a third party to act as a 'black box' to filter sensitive information. Nonetheless, as this could trigger the applicability of merger regulations, a strong 'clean team' / 'Chinese walls' mechanism should also be considered. Based on our experience in this regard, it is often useful to work in close cooperation with the local competition authority to develop such rules, in particular where such authorities have not issued any regulations / guidelines on the disclosure of information between competitors.

Other matters

In addition to the above mentioned aspects, depending on the specific structure of the network sharing arrangement, a number of other areas of significant importance will need to be considered, including: (i) corporate certainty of the parties; (ii) IP rights; (iii) real estate and access rights; (iv) data protection; (v) employment and personnel competency requirements; and (vi) financing. Even though several of the matters mentioned herein could be dealt with internally by operators, the general practice and recommendation is to use a third party consultant experienced in similar deals since the risks are significant.

Individual notes for specific countries

Austria

No updates reported for 2016 – 2017 other than the transactions reported above.

Belgium

Although there have been no network sharing deals in Belgium, the merger deal announced in April 2015 has been approved by the competition authorities: Telenet Group Holding NV (a Liberty Global subsidiary) entered into a definitive agreement to acquire BASE Company NV, the third-largest mobile network operator in Belgium for EUR 1.325bn. Telenet has been an active player in Belgium as an MVNO since 2006 (with Mobistar as the host MNO). As part of this deal, in order to obtain merger approval, Telenet divested two customer databases, the JIM Mobile customer database and its 50% BASE participation in VikingCo NV, the entity that sells mobile services under the 'Mobile Vikings' brand in Belgium, to MEDIALAAN NV, allowing MEDIALAAN to become a full MVNO player on the BASE network. The deal is subject to merger approval from the competition authorities.

Telenet also acquired SFR Belux, enabling it to extend its cable footprint in Brussels, part of Wallonia and parts of Luxembourg.

China

On 28 April 2017, the Ministry of Industry and Information Technology published its Implementation Opinions on Promoting the Co-establishment and Sharing of Basic Telecom Infrastructure 2017 ('2017 Opinions'). These set out the general guiding principles concerning the co-establishment and sharing of passive elements and broadband access facilities. Previous years saw similar opinions published by the government, among the three operators: China Mobile, China Telecom and China Unicom.

The 2017 Opinions set sharing targets for 70% for poles, 45% for ducts and 45% for indoor distribution systems. They also include China Broadcasting Network Ltd (a new operator licensed to operate certain categories of fixed network services) in the sharing arrangements. The operators have used a JV for sharing of their network, China Tower since October 2015. This is an asset heavy JV.

Czech Republic

Since October 2016, the network sharing agreement of 2013 between O2 Czech Republic and T-Mobile Czech Republic has been under formal investigation by the European Commission. The two MNOs are the two largest of only three in the country. The deal, which covers about 85% of the population, includes 2G, 3G and 4G.

In 2015 the MNO O2 Czech Republic split into two separate legal entities – O2 Czech Republic as a retail MNO and Česká telekomunikační infrastruktura (CETIN) as wholesale network infrastructure operator.

There have been two auctions of spectrum since 2015. In 2016 there was additional auction on the remaining spectrum in the 1.8 GHz and 2.6 GHz bands, divided between O2, T-Mobile and Vodafone. In July 2017 the 3.6 to 3.8 GHz bands were auctioned, was divided between O2, Vodafone and two MVNOs. Nordic Telecom and PODA Nordic Telecom had entered the Czech market via the acquisition of Air Telecom a.s. in 2016.

France

At the start of 2016, two of the four main operators in France, Orange and Bouygues, entered into discussions about a potential merger, which would have raised a number of substantive competition issues. These talks however collapsed in Q2 2016.

The French regulatory authority, ARCEP, has approved the gradual phasing out of roaming services in network sharing agreements between Free and Orange on the one hand, and between Bouygues and SFR on the other. ARCEP considers that roaming can only be limited in scale and transitory given its negative effects on incentives to invest. ARCEP is also closely monitoring the big four MNOs' roll-out plans to ensure they meet their coverage obligations.

The French competition authority has also been active in this area over the relevant period. In March 2017 it fined SFR and its ultimate parent Altice EUR 40 million for failing to comply with commitments given when Altice acquired SFR in 2014. Altice / SFR gave commitments to continue to meet deployment targets and maintenance obligations in the network sharing agreement with Bouygues. The authority found that the pace of

deployment had slowed considerably since the acquisition and network maintenance has deteriorated.

Germany

In 2014, MS Mobile Services, a subsidiary of Drillisch AG (an MVNO in Germany) and Telefónica Deutschland agreed the terms for mobile bitstream access. Telefónica granted MS access for five years for up to 30% of available capacity, while MS agreed to take over at least 20% of the same. MS has an option to extend the five-year term twice.

On 12 May 2017 United Internet AG and Drillisch AG entered into a Business Combination Agreement for the step-by-step acquisition of 1&1 Telecommunication SE by Drillisch under the umbrella of United Internet.

Hungary

No updates reported for 2016 – 2017 other than the M&A transactions reported in the table above.

Iran

Iran's Communication Regulatory Authority (CRA) approved the key principles of national roaming in June 2014. Based on these principles, when subscribers of the three mobile operators (MCI, Irancell and Rightel) exit from their provider's coverage area, they must automatically connect to their host operator network and can use its services.

This is mainly good news for Rightel which has good coverage in main cities but needs major investment and some time to cover all cities and rural areas in the country.

Because of limitations in metropolitan areas and conflict between municipalities and telecom operators on the sharing of mobile sites, a company called Ertebat Moshtarak Shahr Co. was established as a joint venture between Tehran Municipality and the three mobile operators in October 2006. This company is responsible for coordinating the operators' use of common sites and spaces in order to install and manage base transceiver station (BTSs) sites.

The approved regulations make clear how operators are to interact with each other and their respective rights and responsibilities for each BTS.

Italy

In 2016 French operator Iliad signed an agreement with the Hutchison and VimpelCom groups as part of their plan to merge their H3G and Wind Italian subsidiaries (the third and fourth mobile operators in Italy) and acquired the assets constituting the remedy package proposed to the European Commission in the context of its merger review process. The agreement, which involves network sharing elements, has been approved by the European Commission.

The remedy package will enable the Iliad Group to offer mobile services in Italy and to become the fourth mobile network operator with nation-wide coverage.

Mexico

The Mexican mobile market continues to undergo considerable changes in the wake of efforts to curb the retail market dominance of Carlos Slim's Telcel, which accounts for around two thirds of the market. Regulatory measures encouraged the entry of AT&T into the market, and its acquisition of Nextel Mexico and Iusacell have resulted in a greater competitive role being played by MVNOs. The MVNO sector is slowly making gains, but still accounts for only about 1% of the market. Telcel is in the process of selling assets to reduce its share to below 50% in line with government legislation passed in late 2013.

The regulator has also endeavoured to encourage competition through issuing additional spectrum. Despite these efforts, only AT&T Mexico and Telcel were eligible to bid for AWS licences at auction in February 2016. Nevertheless, multi-spectrum auctions are expected to be held by the end of 2017, which should enable operators to improve the quality of their mobile data offerings. In the interim, the spectrum sharing deals reported elsewhere in our study are facilitating network roll-out by competing mobile operators.

In May 2017, the Federal Telecommunications Institute (IFT) launched a new telecoms statistics website called the Banco de Información de Telecomunicaciones (BIT). An interactive platform providing open data, BIT aims to improve knowledge on and monitoring of the sector and is considered ground-breaking. It includes data such as market shares and penetration of communications services as well as adoption and use of information and communications technologies at a local level.

The Netherlands

On December 31 2016, Liberty Global (Ziggo) and Vodafone merged their Dutch operations to create the second largest telecoms player in the Netherlands. The 50-50 joint venture created a national unified communications provider with strengths across video, broadband, mobile and B2B services. The European Commission obliged Vodafone to divest its fixed line business of around 150,000 customers, which it sold to T-Mobile in the same month.

Following a successful appeal to the European Court of Justice by the Dutch fixed-line incumbent, KPN, the European Commission's clearance of Liberty Global's earlier acquisition of Ziggo was overturned in October 2017. This was due to the Commission having given insufficient consideration to the impact of the deal on TV Sport markets. The Commission is currently re-reviewing the transaction but resulting changes to the deal, if any, are likely to relate only to the TV sport segment.

Competition appears strong in the Netherlands telecom sector – in July 2017 the competition authority concluded that there is sufficient competition in bundled telecom products, despite the trend of bundling telecom products into all-in-one packages, and in 2016 it concluded the business fibre market was also functioning properly.

Peru

No updates reported for 2016 – 2017.

Poland

The existing T-Mobile/Orange mobile sharing deal has extended to 4G. The merger of UPC Polska and Multimedia, the second and third largest cable operators, is under regulatory review.

Portugal

The telecoms market in Portugal is highly concentrated, with networks intensively shared. In 2014, Optimus and Zon merged to form the second player, NOS. NOS and Vodafone (the third player), share both their fibre and mobile networks. Prior to the fibre deal, Vodafone shared its network with MEO, a subsidiary of the incumbent Altice.

Romania

In January 2014, Orange and Vodafone created NetGrid Telecom, a vehicle for sharing their infrastructure (as reported in previous editions).In the same year, Vodafone Romania S.A. and RCS & RDS S.A. (the 'Digi' brand, and a dominant operator in the cable industry and fixed internet in Romania) entered into a national roaming agreement providing Digi.Mobil users wider coverage for phone calls and internet access.

In 2015, Orange signed a wholesale network agreement with quadruple-play fixed and mobile network operator Telekom Romania (Telekom Mobile Communications S.A. and Telekom Communications S.A.), which gives the latter roaming access to Orange's 4G LTE network on a national basis, while allowing Orange to offer fixed services via Telekom's nationwide fixed infrastructure.

It is rumoured that Deutsche Telekom intends to sell Telekom Romania. The impact on the telecommunications landscape, should the sale go through, remains to be seen.

Russia

Network sharing is relatively new in Russia. Following the amendments to the Communications Law effective July 2016, the joint use of spectrum and infrastructure are allowed, although most network sharing arrangements will require clearance with the Russian antitrust authority. Two mobile sharing deals have been concluded since then (Tele2, VimpelCom and VimpelCom, Megafon), both including 4G and involving passive and active network elements.

Serbia

Serbian operators do not typically publicise their network sharing arrangements. However, sharing does occur, and commonly entails co-location between notable mobile operators, access to passive elements and national roaming agreements.

2016 saw the entry of two MVNOs, Globaltel and Mundio Mobile, under the name Vectone Mobile, focusing on prepaid international calls. Both concluded agreements on network access with VIP mobile, a member of Telekom Austria group.

VIP itself started its Serbian operations roughly a decade ago as a pure MVNO, while gradually developing its own network, and is a further example of network sharing in the country.

Singapore

The business case for 5G is strong in Singapore as both network capacity and spectrum are in short supply. StarHub and M1 have signed a Memorandum of Understanding (MoU) that seeks to explore ways of extending mobile infrastructure sharing provisions in a bid to reduce operational costs as they expand their 4G LTE networks across the city-state and prepare for 5G.

The MoU covers mobile equipment such as base transceiver stations (BTS) and backhaul fibre-optic facilities, and marks a 'first' among MNOs in Singapore, as previous sharing agreements were limited to antenna systems and in-building fibre cabling.

In terms of existing technology, Singtel has announced plans to roll out 'near-gigabit' mobile services using pre-5G technology, initially targeting 800Mbps LTE-A services. Working in partnership with Ericsson, the operator seeks to usher in ultra-high speed mobile data speeds at some high-traffic outdoor locations, delivering

peak speeds up to 60% faster than those available on existing 4.5G services.

Slovakia

In its analysis of August 2016, the Regulatory Authority for Electronic Communications and Postal Services decided that Orange, Slovak Telekom and O2 are operators with Significant Market Power ('SMPs') in their market and imposed certain obligations upon those enterprises in this respect. SWAN Mobile entered the Slovak market in 2015 and in 2016 the Regulatory Authority for Electronic Communications and Postal Services decided that Slovak Telekom was obliged to provide SWAN Mobile national roaming over the mobile networks of Slovak Telekom. In 2017 SWAN Mobile and Orange entered into an agreement on the provision of services of national roaming, meaning that the areas which are not covered SWAN's own network are now covered by Orange.

Slovenia

The Slovenian market has undergone notable consolidation in the last two years. In February 2016, the NCA cleared incumbent Telekom Slovenije's acquisition of a 100% stake in the country's fourth largest mobile service provider Debitel, previously an MVNO using the network of Telekom Slovenije. In the same month, Telemach consolidated its mobile and fixed subsidiaries into one entity, and in another instance of fixed-mobile convergence, in April 2016 A1 and Amis merged. 2017 saw mergers between the MNO Telemach and the Satellite TV provider Total TV, as well as the acquisition by Telekom Slovenije of IZI Mobil, an MVNO.

Spain

The last 18 months have been very active in Spain when it comes to network sharing deals of both fixed and mobile infrastructure networks.

MásMóvil has consolidated its role as the fourth national converged player . It has acquired MNO Yoigo and MVNOs Pepephone and Llamaya, and has reached strategic sharing deals with Movistar and Orange for the provision of national roaming services (the agreement with Orange also covers site sharing for future deployments). In the fixed market MásMóvil has entered into agreements with Orange for co-investing in NGN/FTTH with Orange as well as for wholesale access to Orange's FTTH network.

Telefónica and Vodafone also announced a landmark commercial agreement for wholesale access to Telefónica's fibre network (FTTH), affording Vodafone access in regulated and non-regulated areas for a period of five years.

In terms of regulatory developments, sections of the market have been deregulated by the Spanish NRA and a new regulation has come into force on the use of radio spectrum (Royal Decree 123/2017), which addresses spectrum secondary trading deals.

Switzerland

Current legislation does not provide for any specific provisions concerning network sharing and it is therefore not clear if (and to what extent) network sharing is allowed in Switzerland under the existing law. Moreover, no relevant decision has been rendered by the Swiss Competition Commission or by a court. However, the Swiss Communications Act is currently undergoing amendments which also provide for a short provision regarding network sharing. If enacted, network sharing would require the consent of the licensing authority, as it is already required for transfers of licenses.

Sunrise and Salt have undertaken a pilot study, examining the way network sharing could work for them. The status of this project is unclear. In 2010 the two companies sought approval of a merger, this was prevented by the competition authority.

The Swiss ECS regulatory authority, BAKOM, states that 'there is legal uncertainty regarding network sharing and that this question has not been subject of a decision so far' and 'that network sharing can be seen as a transfer of the license.' The main motivation for sharing now is cost saving. Both these developments show that we can expect to have news for Switzerland in future editions.

Turkey

Mobile network sharing in Turkey is limited to passive infrastructure. Although active RAN sharing is allowed under telecoms legislation, there are no commercial applications of this kind of sharing (the Universal Service Law which permits sharing is designed for rural areas where the population is less than 500). Spectrum sharing is not allowed, although the Information and Communication Technologies Authority is considering removing this restriction with a decision expected by the end of 2017.

On the other hand, regulations centred on the sharing of antenna facilities entered into force in 2016. This enables sharing of antenna facilities and wireless access networks by more than one operator in order to ensure (i) effective use of resources in the electronic communication sector, (ii) reduced investment costs, (iii) environmental protection and (iv) to create a sustainable competitive environment in places which have a population below 10,000.

United Arab Emirates

The UAE's telecommunications sector is currently served by two fully integrated telecommunications operators: Emirates Telecommunications Corporation (Etisalat) and Emirates Integrated Telecommunications Company (du). Etisalat and du provide multiple services across both fixed line and mobile networks.

In October 2015 the UAE Telecoms Regulatory Authority (TRA) announced fixed network sharing across the UAE enabling both Etisalat and du to utilize fixed infrastructure and market services across all locations.

In January 2017 du acquired a license from the Virgin Group to operate Virgin Mobile-branded services in the UAE. The license term is for five years, granting du full rights to ownership, management and operation of the brand in the UAE.

United Kingdom

Sharing deals

The first concerns the EE-Three deal reported in our previous study. EE (a joint venture by T-Mobile and Orange, formed back in 2010) and Three UK (Hutchinson Whampoa) agreed in February 2014 to share 4G network elements. So far, the network sharing deals have survived EE's acquisition by BT.

At the end of August 2017, it was confirmed Openreach and Vodafone were in 'early but serious' discussions about jointly investing in ultrafast fibre for cities in the UK. The initial intention would be to roll out fibre in metropolitan areas (replacing copper lines) and potentially later rolling out more widely.

There have been rumours that Vodafone and O2 are looking to renegotiate their Cornerstone JV to grant both providers more independence to expand their networks. It is reported that Vodafone in particular is keen for more autonomy in major cities, and has already been investing in masts in London (where both operators retained autonomy under the arrangements). It is not clear what the effect of Vodafone's ongoing discussions with Openreach (see section 1) to co-invest in metropolitan fibre networks might have on its involvement / the terms of Cornerstone.

M&A

On 5 February 2015, BT signed a landmark deal to acquire EE for GBP for GBP 12.5bn. Ofcom found no issues with the deal, and provisional approval was given by the UK Competition and Markets Authority (CMA) in October 2015, with final approval granted on 15 January 2016.

On 24 March 2015, the parent of Three – Hutchison – signed a deal to acquire Telefónica's operations in the UK (O2 UK) for GBP 10.25bn. The contentious deal faced an in-depth probe from the European Commission, which ultimately prohibited the merger. A key reason for this was that the Commission believed that since the merged entity would have been part of both network sharing arrangements, MBNL and Cornerstone, it would have a full overview of the network plans of both remaining competitors, Vodafone and EE. Its role in both networks would have weakened EE and Vodafone and hampered the future development of mobile infrastructure in the UK, for example with respect to the roll-out of next generation technology (5G), to the detriment of UK consumers and businesses. The parties offered behavioural commitments in relation to the existing network sharing agreements but the Commission considered would be too difficult to implement and monitor effectively.

Regulation

The Access to Infrastructure Regulations 2016 implement into UK law the EU Broadband Cost Reduction Directive, and introduce measures including sharing physical infrastructure of telecoms network providers as well as infrastructure operators in other utilities.

As part of its Business Connectivity Market Review concluded in April 2016, Ofcom introduced an obligation on Openreach to provide access to dark fibre for the first time (following its refusal to do so in the last such market review concluded in 2013). This measure has however been suspended following a successful challenge to Ofcom's definition of the relevant market. As part of its once-in-a-decade strategic review of the communications sector, Ofcom is proposing to strengthen obligations on Openreach to provide access to its passive infrastructure through a new and wider Duct and Pole Access remedy.

Ukraine

No updates reported for 2016 – 2017.

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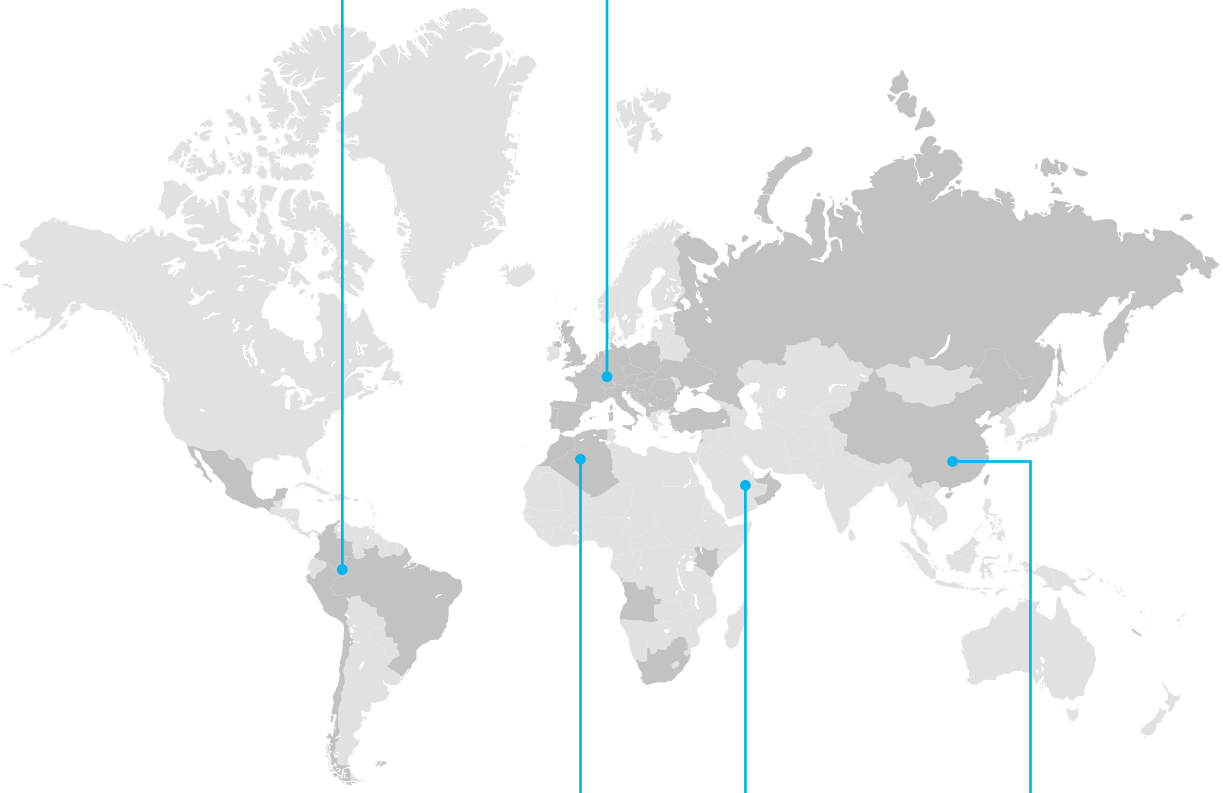

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