Mobile 2015: new spectrum, different business models, more competition?

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Since the turn of the millennium, incumbent mobile network operators (MNOs) across Europe have been encouraging governments to release new spectrum to allow them to deal with the rapid growth in mobile data. However, the release of spectrum is now also facilitating market entry by a range of new players with existing customer bases, often cable operators and Internet service providers (ISPs), assisted by new business models which lower the cost of entry compared to those of the 3G entrants in the early 2000s. This has the potential to counter to the trend of consolidation that has already occurred in many advanced mobile markets; and these new entrants are likely to introduce disruptive, data focused offers. A variety of potential new entrants and existing mobile virtual network operators (MVNOs) should examine the business cases for transitioning to a full MNO, leveraging on these new business models. Incumbent MNOs will have to take this into account in their approach to spectrum lobbying and auctions, in defining their competitive strategy, and in creating retail and wholesale business models. Finally, regulators will have to consider carefully the implications of set-aside spectrum.

The need for additional spectrum

Consumers are using more data, as they have wholeheartedly adopted the mobile internet, and using data on the move. Taking the UK as an example, a combination of consumers' demands to be able to work and play on the move, more advanced mobile handsets (almost 50% of all phones sold in the UK in the first quarter of 2011 were smartphones[1]) and faster mobile networks (revisions to the 3G standard have boosted top speeds by over 14 times, from c. 2Mb/s to 28Mb/s) has meant that the volume of data has already grown by 390 times from 2007 to 2010[2]. From 2010 to 2015, some analysts forecast that this tsunami of data will grow across Western Europe by a further 25 times.

This leads to operator concerns over data capacity, as many MNOs are concerned that their current networks will be unable to handle such an increase in data traffic, even after the rollout of high-speed 4G networks, for example Long Term Evolution (LTE). Increasing the amount of spectrum available is one way of improving MNOs' ability to handle data traffic. It both allows operators to add more spectrum – new carriers – to existing networks and technologies, and gives them the freedom to roll out new technologies in the space they require (e.g. 4G LTE services achieve their maximum bandwidth if given paired contiguous 20MHz bands in which to operate[4]).

Governments have thus been encouraged to release spectrum, as they have also become increasingly aware of the importance of mobile voice and data communications to future growth, both as a sector in itself and as a facilitator of growth in other industries. As the UK's Department for Culture, Media and Sport (DCMS) states: "Communications is an innovative, expanding sector. It also underpins growth in other economic areas, not least the creative industries"[5]. The US's Federal Communications Commission (FCC) calculates the benefits of releasing additional spectrum in the US to be over $100bn in cost savings alone, excluding those due to greater GDP growth[6]. A number of markets have therefore been seeking to release additional useful spectrum to enable the continued growth of the market. This spectrum has principally come from the digital dividend of 800MHz spectrum, released when analogue TV was turned off, as well as higher-frequency 2.6GHz spectrum.

[1] Source: Ofcom, *Communications Market Report 2011*, Figure 5.20. Note smartphone is defined as any handset running an open operating system.
[2] Source: Ofcom, *Communications Market Report 2011*, Figure 5.21.
[3] Source: *Cisco Visual Networking Index*, 2010 - 2015.
[4] 20 MHz of upstream spectrum and 20Mhz of downstream spectrum allows LTE to achieve a theoretical maximum of 100Mb/s.
[5] Source: DCMS, *Enabling UK growth – Releasing Public Spectrum*, p. 3.
[6] Source: FCC, OBI Technical Paper series, *Mobile Broadband: The benefits of additional spectrum*, October 2010, p. 20.

The opportunity for new entrants

Additional spectrum release creates an opportunity for new entrants where the rules are suitable. For the first time since before the last millennium, the digital dividend auctions have released sub-1GHz spectrum, that best able to cover rural areas and penetrate in buildings. In line with this, new entrants, or potential new entrants, are winning spectrum in a number of the most recent auctions.

Sample of spectrum auctions and new entrants

Country	Spectrum auctioned	Date	Rules benefiting new entrant	Number of new entrants	Identity of new entrant(s)
Canada	AWS / PCS	2008	40MHz AWS reserved for new entrants	6	Three cable companies won new AWS[7] spectrum, alongside *Wind* and *Mobilicity*. New entrant *Public Mobile* won PCS[8] spectrum in the same auction
Turkey	2.1GHz	2008	None	No	
Finland	2.6Ghz	2009	Spectrum caps	1	New entrant *PirkanmaanVerkko* is owned by a consortium of telecoms companies
Austria	2.6GHz	2010	None	No	
Germany	800 and 1800MHz, 2 and 2.6GHz	2010	None	No	
India	2.3GHz	2010	None	No	
China (Hong Kong)	850, 900MHz and 2GHz	2010	None	No	
Singapore	1.9 and 2.1GHz	2010	None	No	
Holland	2.6Ghz	2010	Strict spectrum caps, guaranteeing new entrants spectrum	2	Two cable operators won one licence; national ISP won another
Spain	800MHz & 2.6GHz	2011	Regional licences available	5	Four cable companies won new national or regional licences, as did telco *Jazztel*
France	800MHz & 2.6GHz	2011	Spectrum caps	1	ISP *Free* won 2.6GHz spectrum and launched a service in 2012
Portugal	800, 900, 1800MHz, and 2.6GHz	2011	Spectrum caps	No	
Belgium	2.6GHz	2011	Cap at 2x 20MHz of Frequency Division Duplex (FDD) spectrum	1	Time Division Duplex (TDD)[9] licence won by new entrant *BUCD BVBA*
Brazil	800, 1800MHz	2011	None	No	
Italy	800, 1800MHZ and 2.6GHz	2011	None	No	
Argentina	800 and 1900MHz	TBD	TBD		

Source: Regulator websites, Screendigest, Mobile Europe, Rethink Wireless, Hogan Lovells International Spectrum Review.

[7] Advanced Wireless Services, with 1710 – 1755MHz for uplink and 2110 – 2155MHz for downlink.
[8] Personal Communications Service, in the 1900MHz band.
[9] Using a single frequency for both downstream and upstream communication, switching rapidly between the two (in contrast to the more commonly used FDD, where different frequencies are used for upstream and downstream).

New entry has invariably been in auctions where there were rules which could benefit them: either specific set-aside spectrum for new entrants, non-national spectrum allocations, or spectrum caps, although often rules capping the amount of spectrum purchasable by any one player focus more on ensuring a balance between incumbents more than ensuring new entry.

The recent Dutch auctions are a good example. At the time of the 2.6GHz auction in April 2010, the Dutch Parliament had significant concerns about competition: the auction was set up to encourage at least two new entrant MNOs. As a result, both domestic cable companies, *Ziggo* and *UPC*, entered as a joint venture, along with ISP *Tele2*. There has been further set-aside in the 800 and 900MHz bands to ensure that the new entrants have a sustainable spectrum position.

In addition, previously unfavoured spectrum (including the TDD bands) is being opened up, allowing new entrants to use spectrum which has traditionally been ignored by incumbent operators and which has therefore often been sold at significant discounts. This is expected to increase as countries such as China and elsewhere launch TD-LTE[10], creating an ecosystem of equipment and devices in currently underused spectrum bands.

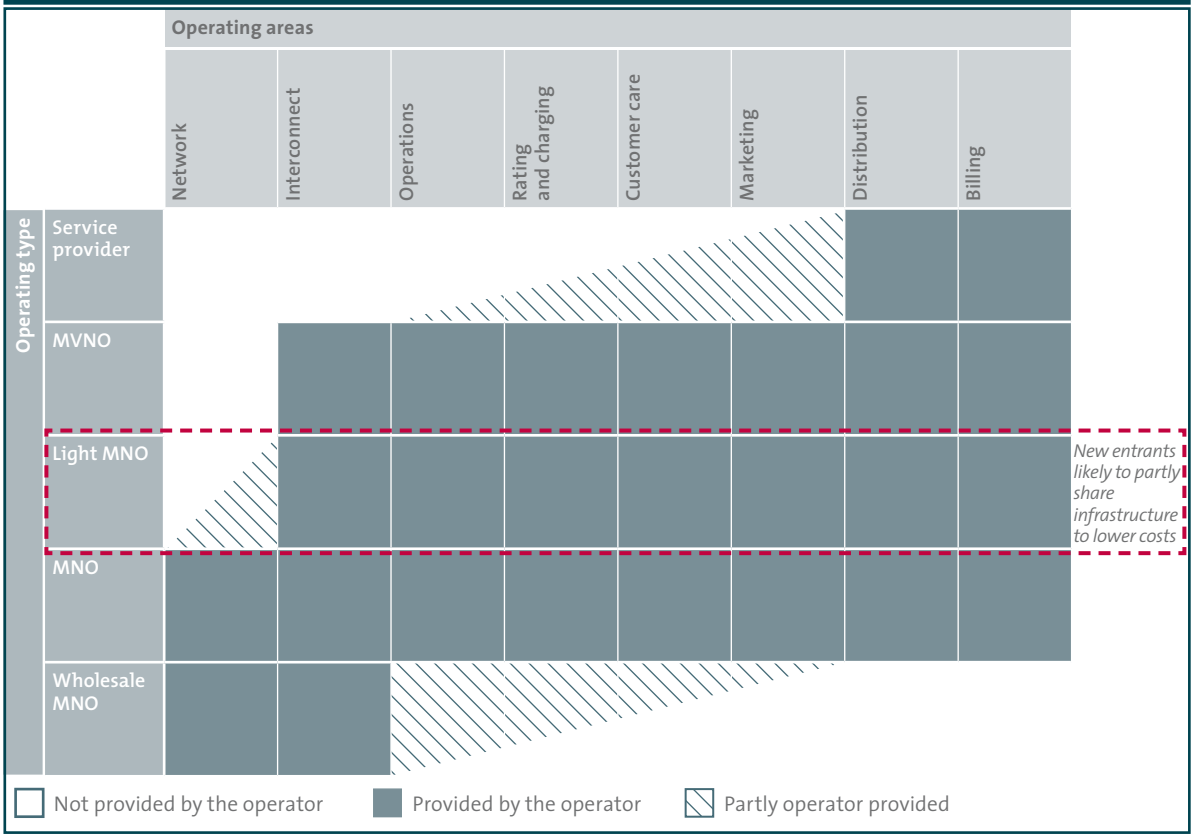
Canada provides an illustration of this. In 2008, it auctioned its AWS spectrum and set aside 40MHz of a total of 90Mhz for new entrants, bringing five serious new entrants into the market; three of them were large existing cable operators (*Eastlink*, *Shaw* and *Quebecor*). New mobile entrant *Public Mobile* also bought PCS band G, becoming the only company globally to deploy equipment in this previously unused band. This spectrum was acquired at an 80% discount to the average AWS auction price[11], illustrating the potential cost savings from using seemingly less desirable spectrum.

New business models have lowered the cost of entry compared to traditional MNOs. Potential players in the mobile market have always been able to enter as MVNOs, using an MNO's network infrastructure and spectrum to deliver services, and this has been the typical access route for supermarkets, cable operators and others who have wanted to launch a mobile operator. MVNOs benefit from much lower capex and operating costs, with no need to run their own network, but suffer from diminished rewards, as they typically take only a share of total revenues, and less flexibility in creating retail offers[12].

Some new MNO entrants, such as the ones mentioned above, are choosing to take a position between a traditional full service MNO and an MVNO, building out their own network on their own spectrum in urban areas and roaming on other networks elsewhere.

[10] TD-LTE is the deployment of 4G LTE services via TDD.
[11] Source: Columbia Capital portfolio, Wireless, retrieved 9 January 2012.
[12] Lower flexibility is a result of paying wholesale rates to another operator, which obliges the MVNO to maintain certain prices to ensure profitability.

Positioning of new mobile entrants amongst traditional mobile market players



Source: Value Partners analysis.

By sharing a network with an established operator, either by sharing parts of the Radio Access Network (RAN), or roaming in rural areas, these new entrants can reduce their upfront capex costs, making it viable to become an MNO, rather than an MVNO, without facing the full upfront cost of national infrastructure rollout.

Dual- and triple-players have the potential to create significant value. Given how mature the majority of developed-world mobile markets are, establishing a mobile player is likely to prove challenging. After the last 3G auctions at the beginning of the last decade, *Hutchison Whampoa* launched its mobile services globally in 2003. It was not until 2010, though, that *Hutchison's 3 Group* achieved its first full year EBIT positive result[13], and it was only due to its deep pockets that *Hutchison* was able to sustain its mobile operations throughout this period.

The majority of new entrants are therefore likely to be those who have a large existing customer base, and where the benefits of becoming a mobile player are not only the direct revenue uplift, but also increasing the retention of existing customers. These are exactly the players we see entering the market in Europe: cable operators, ISPs and telecoms operators. Value Partners' studies suggest that churn can be reduced by up to 30% via the launch of a mobile operator – e.g. a reduction in churn from 20% to 14%. For an illustrative telco with a total customer base of 1 million customers, such a reduction could be worth over £100m in cumulative revenues over five years.

[13] Source: *Hutchison Whampoa Annual Report 2010*, p. 47.

The impact on the mobile market: potential for disruption

In markets where this is occuring, what is the likely impact? New entrants will need to build consumer market share rapidly. They are likely, as with *Hutchison* in the original 3G auctions, not only to compete directly on price, but also to look to fundamentally disrupt the markets they are launching in.

Disruptive strategies are likely to focus on data provision and pricing, given that new entrants are looking to roll out high-speed and -capacity LTE networks to compete with incumbent MNOs. For example, *Tele2*, one of the new entrants in the Netherlands, has already stated its intention of providing disruptive high speed voice and data propositions driven by LTE, with CEO Günther Vogelpoel, saying that "We will come with disruptive elements, with new business models, and would allow OTT voice with no voice package attached. That will be confrontational to current MNO business models, and to them it will be very difficult to follow us as it will cannibalise quickly on their legacy business models"[14]. As incumbent operators increasingly focus on monetising the volume of data flowing over their networks, and bundling together voice and data to minimise the threat from VoIP, they leave themselves vulnerable to challenges from new competitors.

In a similar fashion, *Free Mobile* in France has launched (as of January 2012) a €20 offering with unlimited national and international voice, data[15] and texting, making use of *Free*'s installed base of over five million WiFi-enabled set-top boxes as well as the cellular network for data capacity. Founder and CEO Xavier Niel commented that "We have a different view of things because we are [a] telecom with an Internet startup's model... it is crazy to pay for voice by the minute as voice is so cheap"[16]. A similar model, on an MVNO basis, is being followed by *Republic Wireless* in the US.

We are therefore more likely to see a greater number of more differentiated offerings at a retail level, including the potential reintroduction of unlimited packages. This will challenge incumbent MNOs' ability to effectively monetise their customers' use of data by, for example, implementing tiered pricing structures based on better customer segmentation. In particular, the new entrants are likely to appeal to those who are the heaviest users of data (and therefore would pay most under tiered pricing models), or those at the lower end of the market who are underserved by current propositions.

The development of the light MNO may also encourage network consolidation by creating economies of scale for wholesale LTE networks, as new entrants and incumbents are both attracted by the opportunity to lower costs. New wholesale-only networks, such as LightSquared in the US, may also emerge to service this demand.

[14] Source: Günther Vogelpoel, Tele2 Market Area Director for Western Europe, Mobile Europe 16th September 2011, *Tele2 to disrupt Netherlands market with LTE play*.
[15] Note there is a 3GB fair usage cap on data over the mobile network.
[16] Source: Xavier Niel in GigaOm, Jan 9th 2012, *How France's Free will reinvent mobile*.

What are the strategic implications?

Potential new entrants: confirm the business case for launch and lobby for necessary rules. New entrants will need to carefully consider the business case for launching as an MNO rather than as an MVNO, looking at both the potential revenue upside but, as importantly, the churn reduction benefits and potential strategic benefits for the core business. The correct lobbying stance will also be critical for the success of any new entrant.

Incumbent MNOs: carefully consider spectrum auction and lobbying strategies, and future value chain position. Incumbent MNOs' presumption that new spectrum will be beneficial for their business overall will need to be reconsidered in the light of potential new entry. MNOs should consider the strategic issues involved in spectrum bids and regulatory lobbying, and the potential impacts from additional competition, in particular if it is done on a fundamentally different basis that could erode not only new revenues from data traffic but traditional voice and messaging revenues.

MNOs should also re-evaluate their relative strengths and weaknesses and develop distinct retail and wholesale strategies. For example, on the retail side, MNOs will need to develop smarter segments and pricing to protect their core revenues and margins, while on the wholesale side they should consider the business case for becoming a provider of wholesale access and Mobile Virtual Network Enabler (MVNE) services, allowing them to maximise the use of their fixed asset base and to drive economies of scale, while also benefiting, albeit indirectly, from new entrants' success.

Regulators: determine the desired competitive landscape for mobile. In determining auction rules, regulators will need to consider desired auction outcomes; for example, whether they are looking to promote additional competition, in particular if there are cable or fixed players not already in the mobile market, or whether goals such as spectrum auction revenue maximisation are more important. They should also consider further complications such as the desired level of retail versus wholesale competition. Based on the desired outcomes, regulators should define the extent of set-aside spectrum, if any, and whether additional measures are required to support new entrants.

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In 2007 Value Partners acquired Spectrum Strategy Consultants – a leading UK company specialized in publishing, broadcasting, entertainment, IPTV and mobile – thus further strengthening its international presence. Today Value Partners is a leading advisor in the telecom, media and technology sectors worldwide.
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