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Telecommunications Services - Wireless (Citi)
Europe

European Telecoms: MVNOs

Virtual Operators, Real Pain

■ Industry Overview

- **What's new in this report?** — In this report we look at the impact of Mobile Virtual Network Operators on mobile pricing and the future pricing of 4G mobile services.

- **Don't underprice 4G** — Operators are chasing wholesale revenues to compensate for falling retail revenues. Irrational wholesale deals allow MVNOs to undercut MNOs' tariffs by 25-50%. Too many operators are not disciplined enough when it comes to pricing MVNOs deals. If network operators price wholesale data on 4G as they did with 3G then the hope of pricing 4G at premium is likely to be short lived.

- **Winners and Losers** — We believe that cable operators like **Telenet** (Neutral) and alternative fixed operators like **Jazztel** (Buy) and **United Internet** (Neutral) can gain share in mobile and use it to strengthen their core fixed offers. In our view, operators which have most to lose from MVNOs include **France Telecom** (Sell), **Belgacom** (Sell), **Telefonica** (Neutral) and **Vodafone** (Buy).

- **Convergence = discount** — Operators like Telenet, Jazztel, United Internet and Free offer mobile at very low prices in convergent (fixed+mobile) offers. Mobile is devalued which is not a major concern for them as they made limited investment in mobile and benefit from a halo effect but it should be for their host networks.

- **Positive focus on differentiation** — Regulators are focusing on coverage obligations and have removed MVNO friendly regulation except in France. Network operators recognize having underpriced and seek to break the cycle of competitive price declines with 4G (e.g. all MVNO contracts including 4G need to be approved by the group CEO at Vodafone).

- **Changes in the MVNO space** – We expect **Tele2** (Buy) to move from an MVNO to MNO model in the Netherlands similar to what they did in Norway. We believe that H3G will get approval to merge with Orange in Austria which should benefit **Telekom Austria** (Buy) even if the MVNO terms offered to UPC are attractive.

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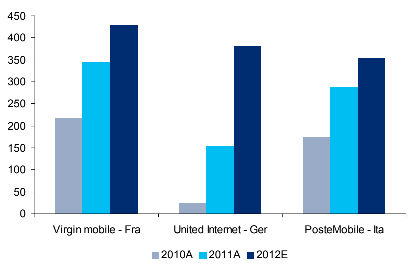
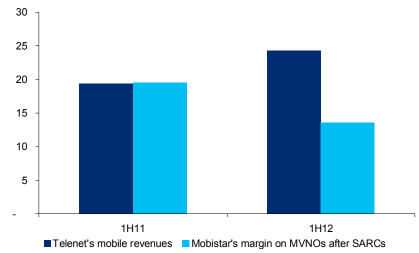
Figure 1. MVNOs with critical scale (Rvs €m)



Source: Company reports, Citi Research

Figure 2. Positive new MVNO deal for TNET



Source: Company reports, Citi Research

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Virtual Operators but Real Pain

MVNOs another agent of deflation in European mobile

MVNOs have been successful at gaining share and driving down prices. Operators generally see MVNOs negatively. Network operators are typically faced with a classic Prisoner Dilemma when it comes to MVNOs as if one operator refuses to sign a wholesale deal with an MVNO then another one will. We believe that the negative impact of MVNOs is likely to continue and could prevent operators from charging 4G at a premium. In most markets, we too often find at least one MNO willing to give access to its networks at discounted price to compensate for low retail market share or falling revenues. We believe network operators need to invest more in their 4G networks and delay giving access to their 4G networks if they are serious about monetizing mobile data as we have seen in markets like the US. The move to full MVNO, lower termination rates and data roaming regulation should help MVNOs grab more market share.

The “Danish flu”

Telmore in Denmark was the first successful low cost MVNO

Telmore in Denmark was the first MVNO which showed how much damage and how successful a low cost strategy could be in mobile. It used a business model similar to the no-frills business model adopted by airline companies like Ryanair or Easyjet. A price war followed when the established operators retaliated. In less than 6 months, mobile prices fell by 40%. Most MVNOs in Europe have tried to imitate Telmore’s strategy with very low prices, simple tariffs and focus on customer satisfaction.

Presence of MVNOs varies country by country

The average market share of MVNOs in Europe tends to be around 10% but varies greatly by market (see Figure 3). For historical and regulatory reasons MVNOs tend to have a higher market share in Northern Europe but are spreading rapidly in some Southern European countries like Spain. In the last section of this report (starting on page 13) we run through a detailed analysis of MVNOs by country. The interesting points we have noticed are:

“I think [..] operators should think and we should think more carefully about MVNOs”, Vittorio Colao, Vodafone CEO

- **Operators underpricing** – MNOs are giving away wholesale deals which are too generous resulting in MNOs being under cut by MVNOs on their retail offers by 25-50%. One example is the recent renegotiation of the roaming deal between Mobistar and Telenet. Mobistar wholesale margin fell by 30% yoy in 1H12 whereas Telenet grew mobile revenues by 25% yoy (see Figure 8).

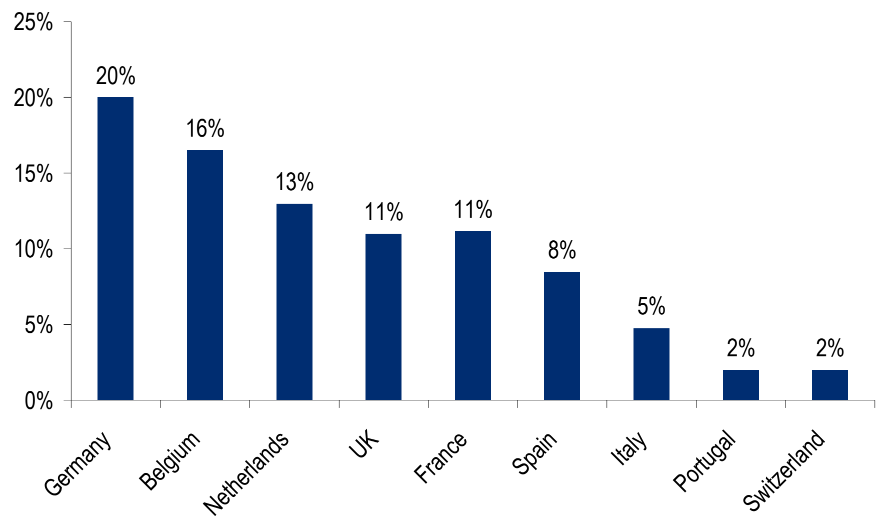
- **MVNOs stronger in bad markets** – MVNOs tend to do well in markets with high level of competition as there is a bigger chance that a struggling MNO will be willing to sign an attractive wholesale deal to fill an underutilized network (e.g. Virgin mobile MVNO deal with One2One later known as T-Mobile in the UK). Spain is showing very strong growth in MVNOs (see Figure 22) which benefit from the tough economic situation pushing customers to shop for cheaper rates.

- **History repeats itself** – One way to eliminate the threat of MVNOs is to buy them. TDC bought Onfone in 2011 and Telmore in 2004 to repair the market. The issue is that barriers to entry are low for MVNOs so buying Onfone for around €40m which was created by a 19 year old 5 years ago may give the idea to similar entrepreneurs that there are attractive exit routes for MVNOs.

- **Wholesale contract structure needs to be improved** – MNOs typically charge per minute, SMS and MB of data and give MVNOs a discount once they reach critical mass and certain thresholds. The issue is that it incentivizes MVNOs to cut prices to reach a higher threshold at which they get improved terms. We believe that this is one of the reasons behind United Internet’s success in mobile which passes the benefit of lower wholesale rates to users.

- **MVNOs are resilient** – MVNOs in France have been relatively resilient to the entry of Free mobile despite its impact on market share and pricing (see Figure 17). MVNOs in France have used the entry of Free in the market to renegotiate better wholesale tariffs which they felt that Free benefited from better terms on the Orange network which carries the majority of Free mobile's traffic.

Figure 3. MVNO market share in Europe in 2012



Source: Citi Research, company data and regulator data

High birth rate and high mortality

The MVNO market has been very dynamic and competitive. The most successful MVNOs tend to have one or more of the following characteristics:

Big retailers and niche players have been very successful MVNOs

- **Companies with strong distribution** – Large retailers have typically been very successful MVNOs as they can leverage their extensive distribution networks and acquire customers at a low cost (e.g. Tesco in the UK and Tchibo in Germany passed the ½ million customer market within 12 months of launch).

- **Companies focused on niche segments** – Mobile operators have traditionally found it hard to service some niche segments with very specific needs like the ethnic market. Ethnic MVNOs like Lebara, which generated over €600m of revenues in 2011, have been very successful. Ethnic MVNOs are typically calling card businesses which moved into mobile and offer tailored made services (e.g. very cheap international calls, call centers in foreign languages).

- **Companies with strong segmented brands** – Virgin mobile in particular in the UK has been one if not the most successful MVNO and is with over 5m users often considered as a mobile operator in its own right. A strong brand on its own is no guarantee of success (see failure of Disney or Easymobile MVNOs).

- **Companies with new devices** – Companies like Amazon have launched MVNOs to push new connected devices. Vodafone supplies SIM cards to Amazon for the Kindle. According to Libby Pritchard, Vodafone's head of corporate communications: "We class the Kindle business as an MVNO because it's a white label deal. We supply wholesale data to Amazon which pay us for data traffic generated by each Kindle device when downloading an ebook. This Kindle data traffic is incremental business that we wouldn't normally have".

Loose Cannon

MVNOs is a very effective but uncontrolled distribution channel which can damage the market

MVNOs can be a very effective distribution channel as they tend to have lower subscriber acquisition costs than MNOs and can more effectively target niche segments (e.g. ethnic minorities). The issues with MVNOs are that they tend to drive prices down, cannibalise MNO retail offers and have low loyalty to their host network. E-Plus in Germany is probably the best example of how to use MVNOs:

- **KPN transformed itself in 2005** – E-Plus decided to push mutli-brands and MVNOs to regain market share momentum and improve margins which fell from mid 30s to 24% in 2005. E-Plus launched 4 owned brands: Base (first flat-rate plan), Simyo (cheap prepaid), Ay Yidiz (ethnic brand targeting Turkish community) and vybemobile (youth brand). On top of its owned brands, E-Plus partnered with 39 MVNOs in Germany realizing that a one size fits all strategy wouldn't work in a market which was getting more segmented.

MVNOs offer the opportunity to outsource the customer acquisition process at a lower cost

- **Margins going from 24% to 42%** – Using MVNOs and multi-brands allowed KPN to lower acquisition costs and leverage its partners distribution. E-Plus' EBITDA margin grew from 24.1% in 2005 to 42.4% in 2010. E-Plus also managed to overtake O2 Germany and become the number 3 operator in Germany with its service market share growing from 11.6% at the beginning of 1Q05 to 15.5% at the end of 2010.

MVNOs are bad news for network operators and good news for consumers. As illustrated in Figure 4, we estimate it only makes economic sense for an operator to move a subscriber to an MVNO if churn is at 30% or above. Otherwise the savings on subscriber acquisition and retention costs are not enough to compensate for the loss of retail revenues. An MNO needs also to able to cut costs (e.g. headcount, number of shops) to benefit from the use of MVNOs.

Figure 4. Churn needs to be above 30% for an MVNO subscriber to have a higher Net Present Value than a retail MNO subscriber (In €)

	For an MNO subscriber	For an MVNO subscriber	Note
Revenues	30.0	7.5	Monthly ARPU, assume wholesale ARPU = 25% of retail ARPU
SARCs	4.5	NA	Assume SARCs worth 15% of sales
Opex excl SARCs	15.0	NA	Assume no opex on hosting an MVNOs
Total Opex	19.5	NA	Assume no opex on hosting an MVNOs
EBITDA	10.5	7.5	Assume EBITDA margin of 35% for MNO
EBITDA pre SARCs	25.5	7.5	EBITDA excl. retention and acquisition costs
Churn	20%	NA	Assume 20% of contract churn
Capex	3.0	3.0	Assume 10% of capex/sales
Tax rate	30%	30%	Assume 30% tax rate
SARC per subscriber	150.0	NA	Per contract sub
NPV per sub	**638**	**378**	**Based on 20% churn and 10% cost of capital**
NPV per sub	**378**	**378**	**Based on 30% churn and 10% cost of capital**

Source: Citi Research

From an MNO perspective, it only makes sense to host MVNOs if the loss of retail revenues will be more than offset by higher wholesale revenues and lower SARCs. We believe that the main reasons for an operator to have an MVNO are:

- **Prisoner dilemma** – Once an operator believes that an MVNO will get a wholesale deal then it makes sense to fight for that deal to mitigate the negative impact on retail revenues. For examples, Martin Bouygues, CEO of Bouygues, has referred to MVNOs as "Cuckoo" i.e. a parasite that sits on your network, takes a share of your revenues and doesn't invest. Despite its negative view on MVNOs, Bouygues has signed wholesale deals with big MVNOs such as Lebara to avoid being left out of a growing MVNO market in France.

- **Lack of commercial perspective** – For operators struggling with gaining market share, MVNOs are one way to increase usage on an underutilized network. For instance, Virgin Mobile in the UK got a very attractive wholesale deal (e.g. Virgin kept all the termination revenues) when it became an MVNO on One-2-one (later T-Mobile) which was struggling with market share.

Regulators have played a role in promoting MVNOs

- **Regulatory pressure** – Many regulators have been in favour of MVNOs to improve market competitiveness. For instance, in France the 3G and 4G licences include the obligation to offer access to MVNOs. There is no regulation at an EU level but several countries use to impose the obligation to host MVNOs (e.g. Germany, the UK, Denmark). Most of those obligations are now gone.

MVNOs only interested in MNOs with lowest wholesale rates

One issue with using MVNOs is that their loyalty is only as good as the wholesale rate an MNO can offer. This means that MVNO will switch network operator if they can get a better wholesale rate by doing so. The other issue is that operators can easily copy one another and it is difficult to protect a leadership in the MVNO market as E-Plus has found:

- **Short lived first mover advantage** – It's difficult for operators to differentiate on their MVNO offering. For instance, in Germany to compete against Ay Yildiz from E-Plus which targets the Turkish community, O2 Ger and T-Mobile respectively launched MVNOs with Turk Telekom and Turkcell which is eroding E-Plus first mover advantage and leadership in ethnic MVNOs.

- **MVNOs prompt at shopping for best rates** – MVNOs can relatively easily switch from one operator to another one in order to get better rates. For instance, Tele2 Netherlands in 2009 decided to switch from KPN to T-Mobile. In France the largest MVNOs like Virgin have moved to a full MVNO business model and have signed MVNO agreements with two networks. This allows Virgin in France to force Orange and SFR to lower their wholesale rate in order to gain a bigger share of Virgin's wholesale traffic.

Emancipation

Full MVNOs bring more autonomy, flexibility and lower wholesale charges

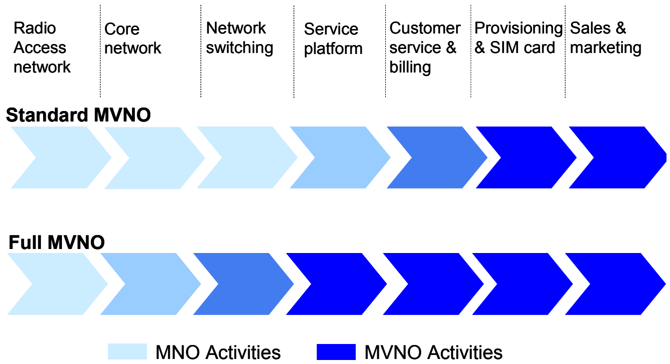
An MVNO is generally defined as a mobile operator which doesn't have a radio access network and lease capacity from a network operator. The standard type of MVNOs can be described as "lightweight reseller" MVNOs. Many MVNOs are now moving to full MVNOs (i.e. "full service" MVNO) which allows for:

- **More control of the network** – A full MVNO uses its own IT platforms (to manage and monitor usage), HLR (Home Location Register, the database with customer details) and other routing equipment (see Figure 5 and Figure 6).
- **More flexibility to launch new services** – It is easier for a full MVNO to develop new services and tariffs as it has more control over the network and a better picture of usage trends. This is particularly relevant for fixed and mobile convergent solutions. Cable operators could offer solutions (e.g. EAP-SIM)[1] which allow for seamless handover of mobile traffic to their WiFi network which will save them money as they will use less capacity on mobile.
- **Lower wholesale charges** – Moving to full MVNOs require some limited one-off capex to buy switching and routing equipment but results in lower wholesale rates as the MVNO uses less equipment from its network provider and will also collect and pay for mobile termination itself[2].

The move to full MVNO is a great time to ask for a rebate

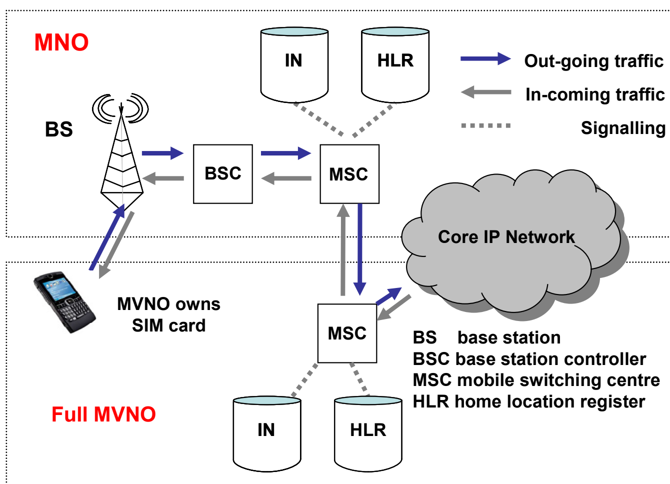
- **Improve bargaining position** – Full MVNOs can typically choose to have more than just one provider. Since they own the switches and routing it is much easier for them to direct traffic from one network to the other. This significantly improves the bargaining position of operators (e.g. Virgin mobile France uses both SFR and Orange networks now that it has moved to a Full MVNO).

Figure 5. Full MVNO have a higher share of the value chain[3]



Source: Citi Research

Figure 6. Full MVNOs have more control over the network



Source: Citi Research

[1] Free mobile launched in April 2012 the authentication protocol called EAP-SIM which allows a Free mobile subscriber to connect to Free's WiFi network through a secured and dedicated IP address without having to put any password to connect. All the authentication is done through the SIM card.

[2] Full MVNOs have their own interconnect agreements for voice termination and also roaming.

[3] There are many different business models for MVNOs: branded resellers with no ownership of the customer nor capacity to set prices, service providers which own their customers and do their own billing and full MVNOs which own their customers and some network infrastructure.

MVNOs moving into data

MVNOs are moving from voice centric business model to data

The voice-centric, operationally light MVNO business model of today is evolving to data-centric and full MVNO. Data usage is going increasingly mobile and is the main growth area going forward. Most devices like smartphones and tablets work on both fixed (through WiFi) and mobile networks. Fixed operators are finding it increasingly important to push fixed and mobile convergent offers for data. Hence we expect alternative fixed operators and cable operators to become increasingly present in mobile through MVNOs especially as they need to compete against incumbents which are being more active at promoting quadruple play offer (e.g. Telefonica's Fusion offer launched in Oct).

Telenet has successfully renegotiated its MVNO contract to a full MVNO

In the past Telenet complained about its first MVNO contract with Mobistar which didn't allow it to be competitive on data pricing. The new full MVNO deal[4] signed between Telenet and Mobistar allowed Telenet to become much more aggressive and successful in mobile and data in particular:

- **Record mobile net additions** – The full MVNO allowed Telenet to become much more aggressive in terms of pricing in particular for data. Telenet had record mobile net additions in 3Q12 following the launch of two new plans. Telenet expects revenue growth to accelerate to between 10-11% yoy in 2013 (vs. 7-8% yoy in 2012) thanks to strong momentum in mobile[5].

Telenet gained 58% of mobile contract net adds in Belgium in 3Q12

- **Lower wholesale charges** – We believe that Telenet has managed to reduce by 25-30% its wholesale rates when it renegotiated its MVNO terms in May 2012. It's roaming deal is now secured until 2017 and includes access to 4G when Mobistar launches it probably in mid 2013. Telenet increased its mobile revenues by 25% yoy while Mobistar MVNO margin went down by 36% yoy in 1H12E[6].

- **Limited capex** – Telenet's capex in mobile is limited to a couple of millions every year. Telenet spent around €35m to buy switching equipment and IT platform as one off costs when they launched their full MVNO. Telenet uses its fixed core network and Mobistar's access network. The only noticeable ongoing investment is related to mobile spectrum which costs around €8m pa (booked in financing cash flows as repayment of lease)[7].

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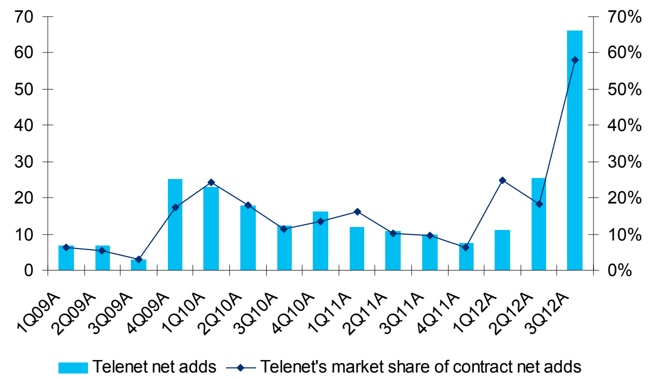
[4] Telenet and Mobistar first signed a "light" MVNO in 2006. Then in Feb 2009, they extended that MVNO contract to a full MVNO. Telenet launched its Full MVNO in the fourth quarter of 2010.

5 We expect strong revenue growth for Telenet in 2012 but believe that Telenet's revenue guidance for 2013 may prove to be overly optimistic. See Telenet Group Holding – Liberty refuses to increase its offer for more details for more details.

[6] Mobistar's recurrent margin after SACs was down 30.3% yoy in 1H12. This provides an even better picture than MVNO revenues down 36% yoy as they exclude the impact of termination revenues. Telenet now collects directly termination revenues. Telenet is by far Mobistar's biggest MVNO.

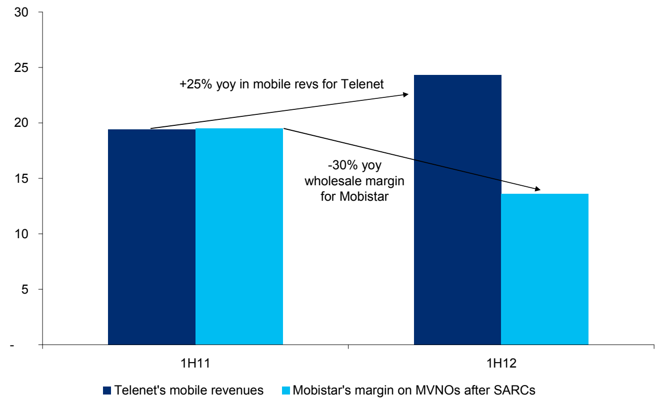
[7] Telenet is currently not using its mobile spectrum. Mobile spectrum payments are treated as repayment of finance lease rather than capex. This has the benefit of not impacting Telenet's FCF guidance which is based on Operating FCF less capex.

Figure 7. Telenet mobile contract net adds reached a record 66k in Q3 (58% market share of contract net adds in Belgium)



Source: Citi Research, Telenet and company data

Figure 8. Telenet growing mobile revenues while Mobistar's MVNO revenues are falling thanks to new full MVNO deal



Source: Citi Research, Mobistar and Telenet

4G the next battleground

Hope of ARPU uplift from 4G may be short lived if MVNOs get access to 4G

We believe mobile operators in Europe which so far have failed to monetise data are hoping they can charge a premium for 4G. Vodafone talks about charging a €10/month premium on 4G and Orange in France charges a €5/month premium on its H+ (i.e. highest speed) data offers. While data is growing fast in terms of usage, price deflation in voice and SMS is getting worse. Mobile users have been quick to arbitrage expensive voice minutes and SMS with cheap data (e.g. WhatsApp, Viber). MVNOs like Telenet are likely to make it harder for MNOs to grow data revenues with 4G by:

Telenet has already negotiated access and wholesale charges on 4G

- **Pricing data aggressively** – Telenet is currently pricing its King offer at €15/month for 1G of data, 10,000 SMS and 150 mins. The data and SMS allowance on Telenet is very generous versus current offers from the existing mobile operators. Telenet has already negotiated access to 4G on Mobistar and agreed on 4G wholesale charges. We believe that Telenet will be in a position to again price aggressively on 4G which will put pressure on established operators to lower their prices to keep their subscribers even if it depresses their average €30/month contract ARPU.

Figure 9. Telenet mobile pricing vs. Belgacom (Proximus)

Operator	Type	Tariff	Voice	SMS	Data	Package
Telenet	MVNO	€ 15	150 min	10,000	1GB	King
Belgacom	MNO	€ 15	100 min	500 SMS	500MB	Smart 20

Source: Citi Research, Telenet and Belgacom

Figure 10. Mobile data equivalent

	Equivalent in Mbytes
1h of voice	60
1000 SMS	0.2

Source: Citi Research

"Usage of OTT products on mobile is good for us", Duco Sickinghe, Telenet's CEO

- **Using OTT**[8] – Telenet doesn't have any meaningful voice revenues and therefore doesn't need to worry about cannibalization of voice by data. On the contrary pushing for the use of OTT services like WhatsApp could be beneficial. The price paid by Telenet on a per SMS basis will be significantly higher than the price it pays for messages sent through OTT as SMS hardly requires any capacity (See Figure 10). With 1GByte, a customer can make over 10 hours of voice calls, send 1000 SMS and still have 400Mbytes to browse the internet[9].
- **Offloading mobile data on fixed** – Cable or fixed altnets operators can offload data traffic from mobile to fixed when a mobile user is within the range of one of their WiFi hotspots (e.g. an iPhone user coming home will have her/his phone automatically connected to WiFi for data). This will allow the MVNOs to save costs as they won't have to pay for the data traffic which will be on their fixed network.

The big difficulty for operators is how to set wholesale charges for 4G as:

If MVNOs don't follow then pricing 4G at a premium may not be possible for MNOs

- **No control on tariff structure from MVNO** – Most MVNOs are free to set their own tariffs. This means that mobile operators cannot do anything to prevent MVNOs from pricing MVNOs at the same price as 3G and at a discount to their own 4G retail offers.
- **Higher cannibalization risk** – Cable operators and fixed alternative operators (like Telenet or Jazztel) are likely to cannibalise the mobile operators hosting them as they will target the mass market and not just small segments. The other cannibalisation risk is that of voice and SMS by data which is likely to increase as 4G thanks to lower latency and higher speed should make the customer experience of instant messaging and VoIP applications more attractive than on 3G.

Large MVNOs have strong bargaining power against declining MNOs

- **MVNOs have increasing bargaining power** – Some MVNOs have reached critical scale (see Figure 2). The issue for network operators is that some of the vey large MVNOs (e.g. Virgin mobile in the UK and France, United Internet, PosteMobile…) are now so big that losing them would have a noticeable impact on EBITDA. Network operators with negative revenue growth are under pressure to keep their largest MVNOs even if it means renegotiating lower wholesale charges or non exclusive deal like Orange did with Virgin mobile in France.

'We believe that our MVNO wholesale rates are among the most attractive available in Europe", H3G Austria's CEO Jan Trionow

- **Regulatory risk** – The EU commission has set prices for wholesale mobile data roaming. The risk is that regulators use this regulation as a blueprint to lower wholesale national mobile data roaming charges[10]. In countries like France or Norway, MNOs have the obligation to provide access to their 4G network to MVNOs (although MNOs have the freedom to set their wholesale charges). In Austria, MNOs like H3G are likely to offer MVNOs some good terms to get approval to consolidate the market. RTR the Austrian regulator has proposed the following rates very aggressive rates for MVNOs: €0.01 per minute, €0.004 for SMS and €0.002 per MB.

[8] OTT stands for Over The Top. OTT refers to content from provided by third parties such as Skype or WhatsApp through internet connected devices such as smartphones. Mobile operators normally receive no payments from OTT providers and are only responsible for carrying the IP traffic.

[9] The number of minutes and SMS that can be sent with 1GB of data is likely to continue going up as compression and encryption technology keeps improving.

[10] Prices will remain relatively high for wholesale data roaming at €0.01 per megabyte by July 2014 (i.e. 500MB for €50) but the risk is that will continue to fall very sharply as they have done in the past (€0.5/MB in Jul 2011, €0.3/MB in Jul 2012, €0.2/MB in Jul 2013 and €0.1/MB in July 2014).

There are other longer terms threats posed by MVNOs especially from:

Tele2 moved from MVNO to MNO in Norway and maybe soon in Netherlands

- **MVNO becoming MNOs** – We have seen cable operators and smaller fixed operators acquire relatively cheap spectrum in Belgium (Telenet) and the Netherlands (Ziggo/UPC, Tele2) helped by governments willing to see new entrants bring more competition. The transition from a full MVNO to an MNO is not necessarily as risky or costly as it may seem especially if spectrum can be acquired on good terms (see our repot Dutch Spectrum Auction: Getting Ready For Action: Buy Tele2, Stay Cautious On KPN). Tele2 has a full MVNO in the Netherlands which could be extended to an MNO if it acquires 800MHz spectrum. We would expect Tele2 to use a similar approach to what it did in Norway when it started as an MVNO and has now become an MNO (see page 21 for more details).

Apple could become an MVNO

- **Apple and Google using soft SIM** – Mobile operators have already lost a lot of the mobile value chain to Apple and Google who dominate the smartphone software market. Apple has been interested in offering “soft SIM”. Currently mobile phones use a SIM[11] card which contains a mobile network subscriber’s account information. Rather than using a physical SIM card, Apple could store the account information of a mobile subscriber in its software. This would increase the risk disintermediation for operators which would take a further step towards becoming just a “dumb pipe”. Apple already bills directly its iPhone customers for use of apps and music but has yet to launch soft SIMs probably mindful that operators could retaliate by cutting iPhone subsidies.

M&A

Best option for an MVNO is to be bought by an MNO hoping for market repair

Most MVNOs don’t tend to have high life expectancy. The unsuccessful ones tend to go out of business pretty quickly and the successful and most disruptive ones are generally bought by MNOs trying to repair the market. This has been particularly true in countries like Denmark where MVNOs like Telmore and Onfone were so successful in disrupting the market that TDC had to step in to buy them out even at the risk of encouraging new MVNOs to launch in a market with low barriers to entry.

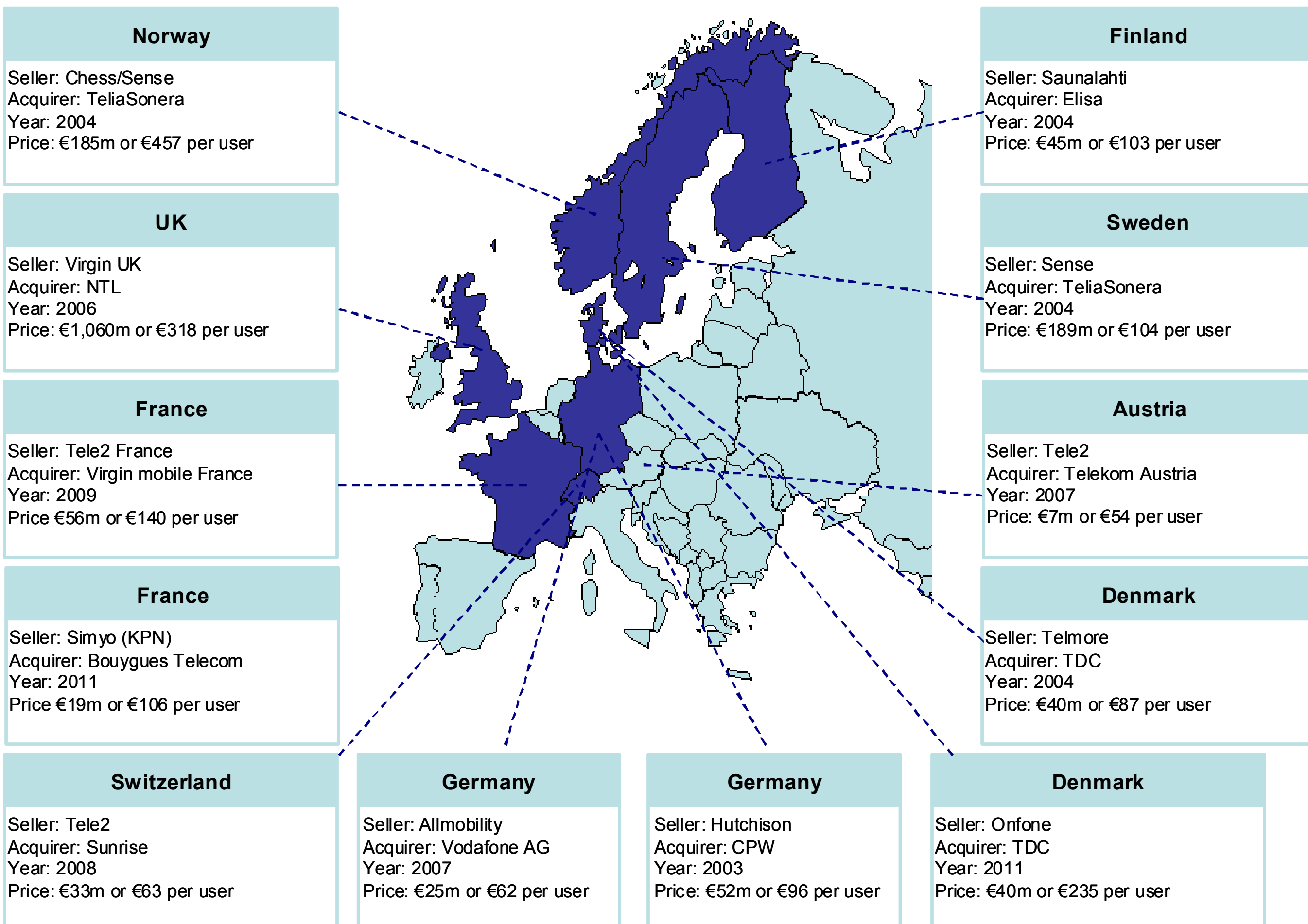
Price per users vary greatly for MVNOs

Prices per MVNO user tend to be around €100 to €200 but vary significantly depending on 1) quality of the subscriber base (prepay vs. contract), 2) potential for market repair, 3) difficulty to move users (e.g. does the MVNO own the SIM card and how long the MVNO contract is), and 4) size of the subscriber base (the bigger the base the higher the price per user as market repair can be substantial).

Figure 11 illustrates some of the main transactions in the MVNO space. Many transactions tend to be too small for details to be provided.

[11] Subscriber Identification Module card

Figure 11. M&A deals involving MVNOs across Europe



Source: Citi Research and company data

Country Section

Each country in Europe has a different MVNO market

The MVNO market in Europe tends to be very country specific partly due to regulation, market structure and willingness of the established operators to open their network to MVNOs. MVNOs tend to be particularly successful in market with high level of competition as struggling operators look at MVNOs to improve the declining revenue trend. The price discount of MVNOs is typically between 25-50%.

MVNO typically pricing at a 25-50% discount

UK: A long history of MVNO success

MNOs in the UK were originally only wholesale providers

Background – MVNOs have been present in the UK market since 1983. This was driven by regulation. Vodafone and BT Cellnet were initially wholesale providers and MVNOs were offering retail services to end users. The obligation to offer wholesale services to MVNOs was part of the MNOs' licence conditions. All license obligations have now been removed and mobile network operators have participated in market consolidation by buying wholesale providers (e.g. Vodafone bought Singlepoint which had 1.5m customers in 2001).

Virgin mobile in the UK offers unlimited mobile data

MVNO pricing – MVNOs in the UK remain relatively aggressive in a very competitive market. One of the issues is also that some MVNOs like Virgin mobile offers unlimited mobile data starting from £23/month for existing cable subscribers (both 3 UK and T-Mobile Full Monty also offer unlimited mobile data). All the UK mobile operators are competing aggressively on prices and don't allow any significant price premium vs. MVNOs as illustrated on Figure 12.

Figure 12. MVNO vs. MNO prices in the UK

Operator	Type	Tariff	Voice	SMS	Data	Package
Virgin mobile	MVNO	£15.00	600 min	Unlimited	1Gb	Essential
O2	MNO	£20.00	Unlimited	Unlimited	1Gb	O2 Simplicity

Source: Citi Research, Virgin Mobile UK and O2

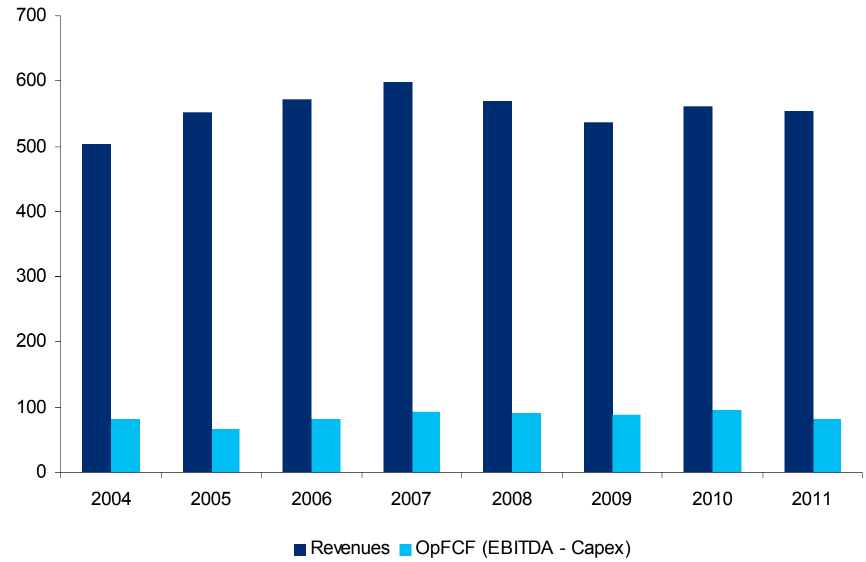
Note: Price for Virgin Mobile is valid only for Virgin broadband and/or telephony subscriber

Virgin mobile shows that MVNO can generate cash with c.£0.1bn of opFCF pa

Virgin Mobile UK – Figure 13 illustrates the performance of Virgin Mobile in the UK hosted on EE which is the biggest and arguably most successful MVNO in the UK:

- **Sold for £1bn** – Virgin Mobile was sold to cable operator NTL for £962m in 2006.
- **Strong cash flow generation** – Virgin mobile has generated very steady opFCF (defined as EBITDA – capex) of between £90-100m over the last 10 years.
- **3% market of service revenues** – Virgin mobile generates in excess of £500m with a market share of around 3% of mobile service revenues in the UK or 8% of EE's service revenues.

Figure 13. Virgin Mobile UK showing steady performance (In £m)



Source: Citi Research and company data and Virgin Media

Germany: Home of multi-brands

GSM licenses in Germany included the obligation to host MVNOs

E-Plus opened its door to MVNOs before all the other MNOs followed

Background – The first GSM licenses in Germany contained obligations for the mobile network operators to react positively to serious applications from MVNOs and not to discriminate between MVNOs. Those obligations including the obligation to offer products to service providers (e.g. Freenet, Drillish, Phonehouse) have been included in the UMTS (3G) licences but are not as strict as in the GSM licences. The German mobile market has one of the highest numbers of MVNOs with independent service providers[12] controlling around 20% of the market. E-Plus owned by KPN was the first operator to adopt a strategy favouring MVNOs and multi brands. This strategy has been copied by all operators with T-Mobile pushing very aggressively and successfully its low end brand called Congstar, Vodafone pushed new MVNO deals like the one with United Internet. Cable operators (Unitymedia/KabelBW and KDG) have signed MVNO deals with O2.

Figure 14. E-Plus leader in MVNOs and brand licenses in Germany

Own brands	Postpaid Traditional	Postpaid Low cost	Prepaid Low cost	Ethnic	Youth
	Base	yourfone.de	blau.de simyo	ay yildiz	vybemobile
Wholesale	ALDI TALK	METRO MOBILE	NettoKOM	debitel	solomo

Source: Citi Research and KPN

[12] Independent service providers are those which have neither corporate nor sales cooperation links with network operators.

MVNO pricing – Pricing on MVNOs has been relatively disciplined which may be partly explained by the fact that the four established network operators are owned by incumbents and have been focused on generating cash in Germany. There has also been a relatively low elasticity in Germany compared with other markets.

MVNO pricing not too disruptive in Germany

Figure 15. MVNO vs. MNO prices in Germany

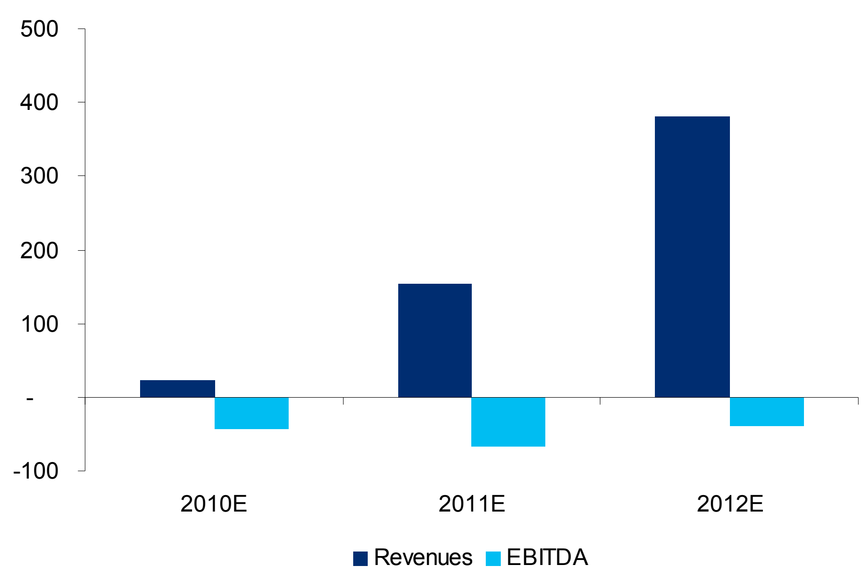
Operator	Type	Tariff	Voice	SMS	Data	Package
1&1 (United Internet)	MVNO	€ 29.99	unlimited	unlimited	500 MB	1&1 All-Net-Flat Plus
T-Mobile	MNO	€ 44.95	120 min	unlimited	300 MB	4-fach-Flat-Paket

Source: Citi Research, United Internet and Deutsche Telekom

United Internet is very successful as an MVNOs benefiting from favourable wholesale terms with Vodafone

United Internet – The 1&1 brand used by United Internet as its retail mobile brand is very well established in the fixed market. United Internet competes with the main MVNO brands in the smartphone and mobile broadband segments (around 90% of sales come from smartphones; only 10% SIM only). 1&1 has an MVNO agreement with Vodafone and passed 1m subs in June 2012 and has reached critical mass (close to 2% of mobile service revenue in Germany around 5% of Vodafone's service revenues) and therefore better terms with Vodafone. UI does not aim to benefit from higher gross margin and has passed benefit to tariffs. UI aims to sustain its run rate of more than 100k net ads per quarter in the medium term. We expect UI will reach 2m subs by the end of 2014. We understand that UI's agreement consists of further thresholds at which UI gets improved terms.

Figure 16. United Internet showing very strong growth in mobile (In €m)



Source: Citi Research estimates

France: Pro MVNO regulation

Full MVNOs in France benefit from mobile termination asymmetry and access to 4G

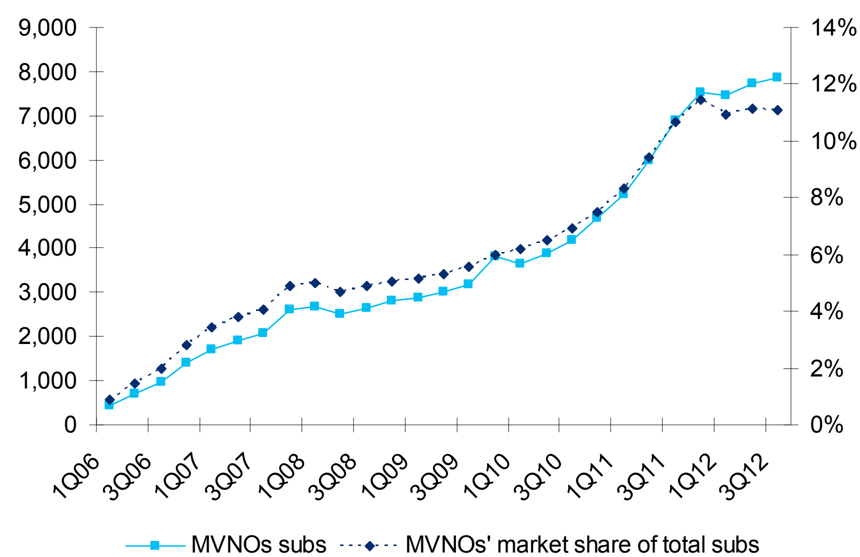
Background – ARCEP the French regulator has been a strong proponent of MVNOs. This was especially true before the entry of Free mobile when ARCEP's analysis showed that there was joint dominance in French mobile. However the European Competition Council disagreed with the finding of joint dominance by Orange, SFR and Bouygues. ARCEP recently decided to grant a very high asymmetry of 60% to full MVNOs (including Free mobile). This is a surprising move

relative to other European markets where full MVNOs have the same mobile termination rates than their host network which makes sense to us as mobile termination rates are supposed to be based on network costs. The EU commission queried ARCEP's proposal to set higher wholesale prices and started an investigation. In order to ease the concerns from the EU Commission, ARCEP modified its proposal with the main change being the end of MTR asymmetry for MVNO by Jan 2013[13]. The main outstanding regulatory issue with full MVNOs concerned SMS termination. Free mobile has been asking for an SMS termination rate of €0.0285 vs. €.015[14] for the three main operators. Established operators have complained that such an asymmetry could lead to a cross subsidy of up to €5/month. We believe that the most likely outcome is that Full MVNOs and Free will be granted an asymmetry for SMS similar to the one for voice.

MNOs have the obligation to offer 4G to MVNOs but only SFR has the obligation to offer 4G roaming to Free

MNOs in France have an obligation as part of their 4G licences to give access to their 4G network (this is true only for MVNO not for Free which will have access to SFR's 4G network under certain conditions[15]). In our view FT is likely to offer 4G roaming to Free to avoid losing roaming revenues on 4G which would go to SFR (see our Report France Telecom – The New Land of Low Returns for details).

Figure 17. French MVNOs' market share now exceeding 11% (subs in '000)



Source: Citi Research and ARCEP

Significant price discount between MVNOs and MNOs

MVNO pricing – MVNOs have enjoyed very strong momentum in the French market since 2006 as shown in Figure 17. This was partly driven by the established network operators and in particular France Telecom which used MVNOs to target niche segment in the market and make the market more competitive for a new entrant. MVNOs lost subscribers in 1Q12 when Free entered the French mobile

[13] Original proposal granted a 38% mobile voice termination asymmetry until the end of 2013 with no date on when the asymmetry would end.

[14] SMS termination rate came down from €0.015 to €0.01 for Orange, SFR and Bouygues on 1st July 2012.

[15] SFR has a regulatory obligation to offer Free mobile a roaming agreement on 4G since it bought two blocks of 800MHz spectrum. This roaming agreement will only be valid as soon as Free reaches 25% population coverage with its 2.6GHz 4G network.

market. Since then, MVNOs have increased subscribers at a lower rate and stabilized their market share. MVNOs like Virgin have been able to significantly decrease their prices thanks to a move to full MVNOs which offer them better terms and asymmetric termination rates. Smaller MVNOs are likely to exit the market in our view as KPN did when it sold its Simyo business in France to Bouygues.

Figure 18. MVNO vs. MNO prices in France

Operator	Type	Tariff	Voice	SMS	Data	Package
Virgin Mobile	MVNO	€ 19.99	unlimited	unlimited	3GB	EXTAZ
Orange	MNO	€ 34.90	unlimited	Unlimited	500MB	Origami star 24/7 500MB

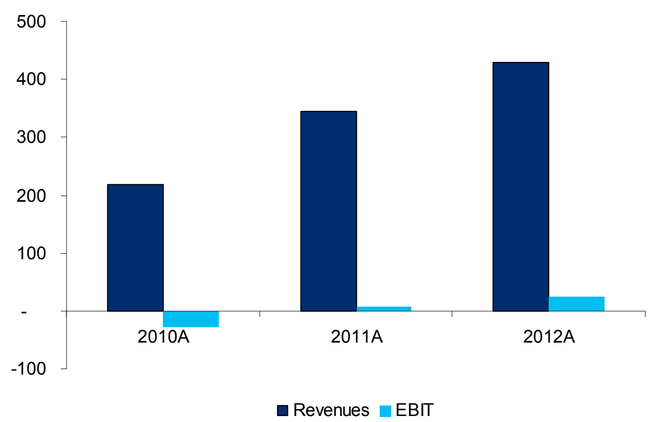
Source: Citi Research, Virgin Mobile France and Orange France

Virgin mobile in France managed to stabilise its sub base and stay EBIT positive despite entry of Free mobile

Virgin Mobile – Virgin Mobile is the biggest MVNO in France. Despite the entry of Free mobile, Virgin mobile has managed to stabilise its customer base and keep its EBIT margin positive. Virgin Mobile in France has almost 1.9m subscribers and targets 50% of its customers on full MVNO by March 2013. The move to a full MVNO allows them to:

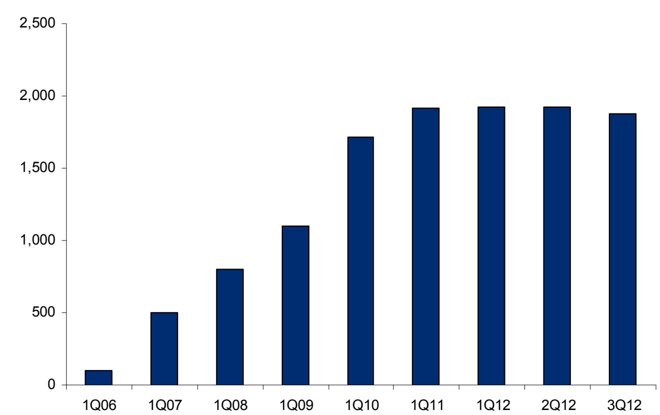
- **Improved their bargaining position** – Virgin signed a full MVNO deal with SFR in 2011 as FT which was its host network since 2004 refused to give them a full MVNO. Now it has managed to get FT to extend its current MVNO to a full MVNO contract probably as FT couldn't afford to lose an MVNO which we estimate represent around 4% of its mobile service revenues. This has helped them renegotiate lower tariffs with FT and SFR.
- **Lower costs** – With a full MVNO, Virgin will have to spend slightly more capex but will get better wholesale rates and therefore lower opex.
- **Increase revenues** – revenues were up 9% yoy in calendar 2Q and 3Q12 despite the entry of Iliad thanks to termination revenues which Virgin now collects. Even if total number of customers was slightly declining in Q3, the number of contract subscribers is increasing.

Figure 19. Virgin mobile France Performance (In €m, March year end)



Source: Citi Research and Carphone Warehouse[16]

Figure 20. Virgin Mobile managed to broadly stabilise subscriber numbers despite entry of Free mobile (Customers in thousands)



Source: Citi Research and Carphone Warehouse

[16] Carphone Warhouse has a 47.1% stake in Virgin Mobile France

Denmark – The origin of the pandemic

First successful low cost MVNO started in Denmark with Telmore

Background – Denmark was the first market where low cost, "no frills" business models where implemented by MVNOs. Telmore implemented with great success the "no frills" business model similar to what happened in the airline industry with the likes of Easyjet or Ryanair. Established operators made the mistake of entering this price war and in less than 6 months the prices fell by 40%. One of the key reasons for the success of MVNOs in Denmark has been the support from the regulator. The two biggest network operators TDC and Sonofon were classified as dominant providers and were obliged to produce a reference offer similar to what fixed operators did for local loop unbundling. Those obligations no longer remain.

Only solution to stop MVNOs taking share has been to buy them

MVNO pricing – Price competition remains intense but has improved significantly following a series of M&A. Telmore was bought by TDC and CBB-Mobil by Sonofon. Last year TDC bought the Onfone an MVNO which followed a similar low cost strategy to Telmore and innovative pricing structure with integrated tariff plans.

Figure 21. MVNO vs. MNO prices in Denmark

Operator	Type	Tariff	Voice	SMS	Data	Package
Onfone	MVNO	kr 149	6 hour	Unlimited	1 GB	6 times tale
TDC	MNO	kr 299	360 min	Unilimted	5 GB	Mobilpakke 6 Timers tale

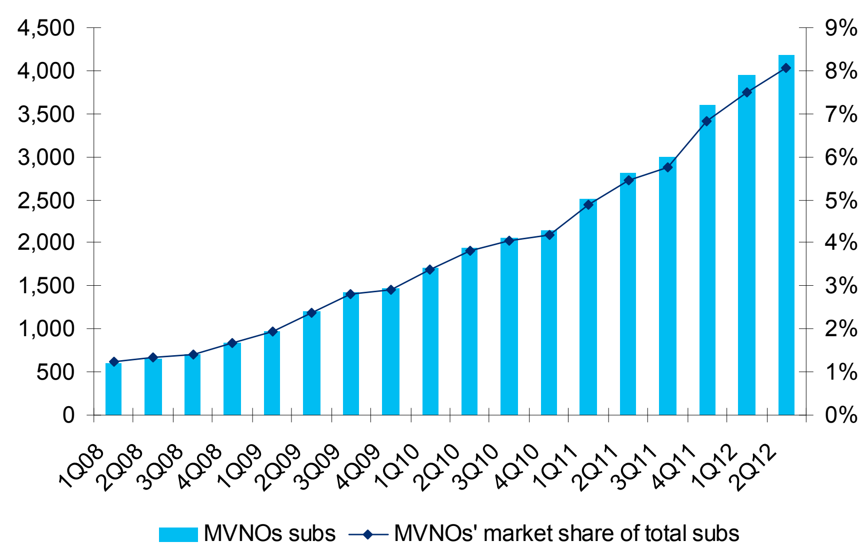
Source: Citi Research, Onfone and TDC

Spain – MVNOs helped by tougher macro

Tough economic situation has helped MVNOs in Spain

Background – The Spanish mobile market has been hit hard by macro and price competition headwinds. MVNOs have been very successful at growing market share to just below 10% in a market which has become more price conscious.

Figure 22. Spanish MVNOs' market share now close to 8% (subs in '000)



Source: Citi Research and CMT

Attempt by TEF and VOD to cut subsidies in Spain back fired when Orange and the MVNOs didn't follow

MVNO pricing – Vodafone's CEO recently expressed his displeasure at the increased price competition driven by MVNOs in Spain which is "contracting our acquisition growth and market share". MVNOs decided earlier this year not to follow the lead from Telefonica and Vodafone to cut mobile subsidies. This allowed MVNOs to gain even more market share. Vodafone and Telefonica were forced to backtrack on their decision to cut subsidies which would have benefited the market.

Figure 23. MVNO vs. MNO prices in Spain

Operator	Type	Tariff	Voice	SMS	Data	Package
Jazztel	MVNO	€ 15.00	600min/sms	price per SMS	1 GB	Llama y Navega 600
Telefonica	MNO	€ 29.50	150min	Unlimited	500MB	Habla y Navega 30

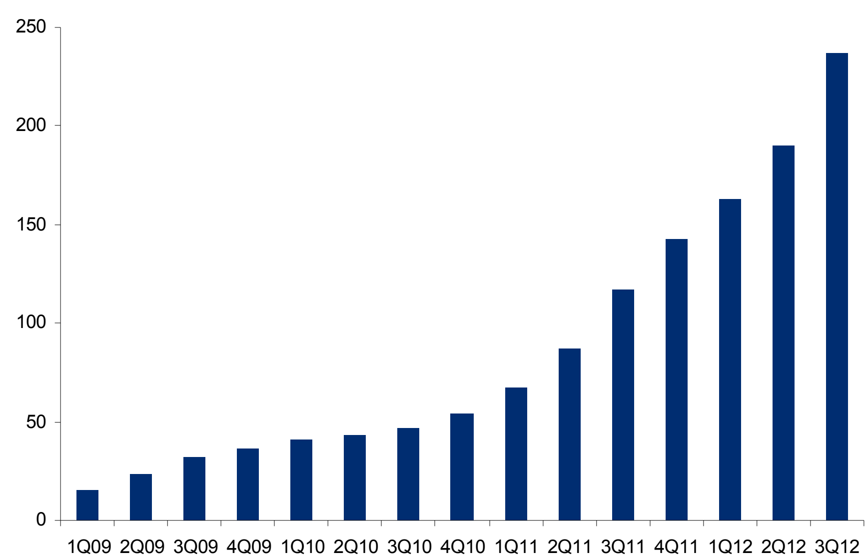
Source: Citi Research, Jazztel and Telefonica

Note: Price for Jazztel is valid only for existing fixed subscriber

Move to quadplay initiated by Jazztel with big discounts on mobile could lead to significant ARPU dilution

Jazztel – Jazztel hosted on the Orange network launched a convergent fixed/mobile offer in Aug 2012 priced very aggressively and published record net additions in 3Q12. This has now been followed by all the existing operators which are now offering quadruple play offers which include very significant discounts of up to 40% versus buying comparable fixed and mobile offers separately. Jazztel mentioned that 80% of its 46k net adds in 3Q12 came from packages with flat tariffs. The main issue for the established operators will be that those quadruple play offers are likely to lead to significant ARPU dilution on mobile. Jazztel together with Telefonica could potentially benefit from lower churn on its convergent offers if it manages to differentiate them from the competition by adding fibre thanks to the agreement it signed with Telefonica to rollout fibre.

Figure 24. Jazztel's mobile base doubling over last 12 months (Customers in thousands)



Source: Citi Research, Company Reports

Italy – PosteMobile the notable exception

MVNOs are small in Italy with the notable exception of PosteMobile

- **Background** – MVNOs have had a relatively limited influence and momentum in Italian mobile with the notable exception of PosteMobile. More recently the Italian market has witnessed some high profile launches of MVNOs such as BIP in September 2012. BIP is run by Mr. Bona the former head of TIM. Headline prices on BIP are pretty aggressive at €3c per min for voice and €12c per SMS but there is a relatively high set up call of €16c per call.

- **MVNO Prices** – MVNOs in Italy don't tend to be particularly aggressive on prices even if they are at a discount to the established operators.

Figure 25. MVNO vs. MNO prices in Italy

Operator	Type	Tariff	Voice	SMS	Data	Package
PosteMobile	MVNO	€ 22.00	500 min	500	1 GB	Zero Pensieri Medium
Telecom Italia	MNO	€ 29.00	300 min	300	1GB	Tutto Compreso 300

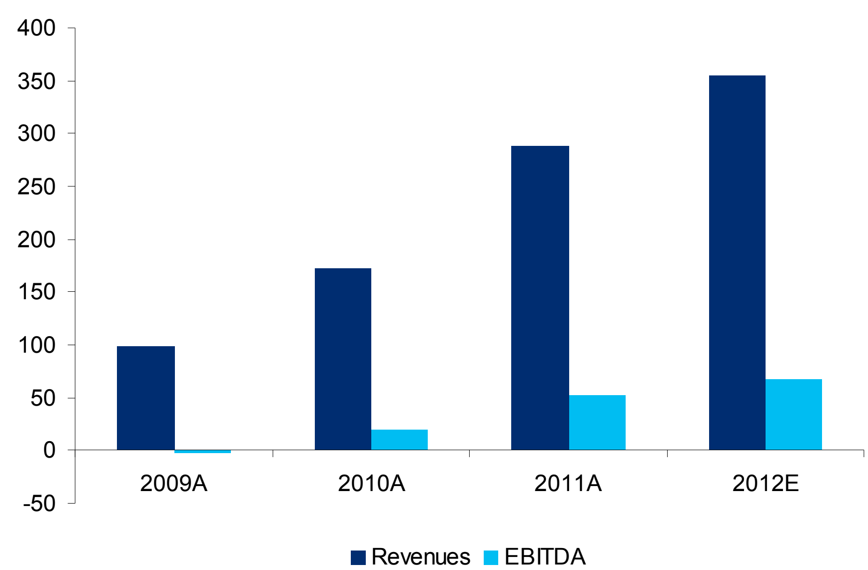
Source: Citi Research, PosteMobile, Telecom Italia

PosteMobile aiming at becoming the 4th player in Italian mobile

- **PosteMobile** – PosteMobile launched in 2007 and is hosted on the Vodafone's network. PosteMobile aims at becoming the 4th player in Italy based on mobile revenues and it currently has around 2% market share of mobile service revenues in Italy representing 4% of Vodafone's service revenues. PosteMobile benefits from a very strong distribution network with 14,500 points of sales (i.e. post offices) and strong positioning on value added services (e.g. mobile payments). PosteMobile is now generating EBITDA margins of close to 20% with capex/sales ratio of close to 10%.

PosteMobile generates around €350m of revenues with 20% EBITDA margin

Figure 26. PosteMobile targeting >€350m or revenues and close to 20% EBITDA margin



Source: Citi Research and 2012E based on PosteMobile's forecast published on 17th July 2012

Netherlands – Watch out for Tele2

MVNOs in the Netherlands always had a strong presence

- **Background** – MVNOs in the Netherlands had a market share of 15.2% in 1Q12. The Dutch mobile market is highly segmented with operators relying on MVNOs and multi-brands to target all segments (e.g. KPN with Telfort, Hi and KPN uses 3 main brands to address the market). .

- **MVNO prices** – MVNOs tend to price well below the main brands from the existing operators. However all operators have their own low end brands competing on prices against MVNOs.

Dutch market is extremely segmented with operators using multi brand strategy

Figure 27. MVNO vs. MNO prices in Italy

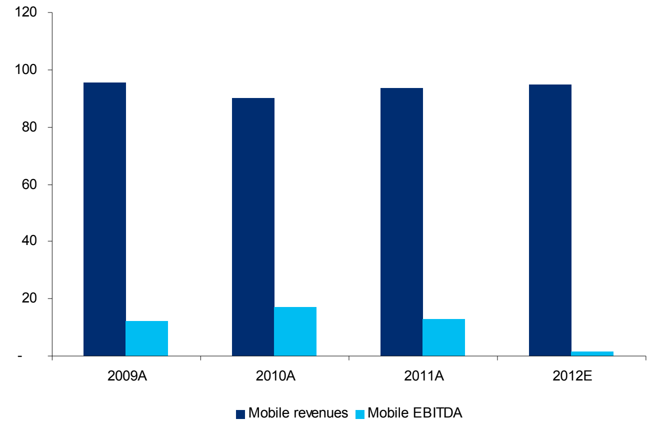
Operator	Type	Tariff	Voice	SMS	Data	Package
Tele2	MVNO	€ 18.50	300 min	unlimited	500MB	SIM only
KPN	MNO	€ 30.00	250 min/SMS	250 min/SMS	1000MB	SIM only

Source: Citi Research, Tele2, KPN

We expect Tele2 in the Netherlands to transform itself from an MVNO to an MNO as it did in Norway

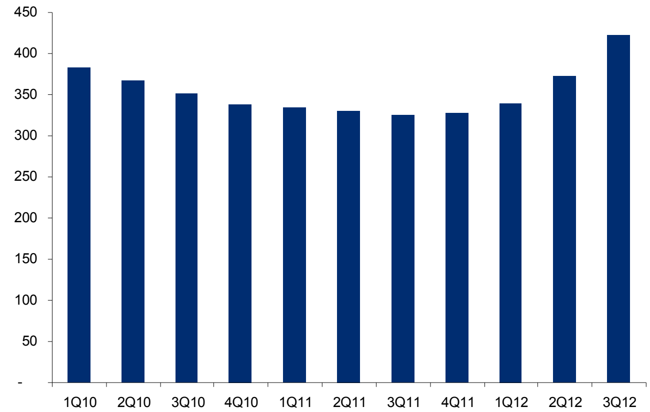
- **Tele2** – Tele2 has the biggest MVNO in the Netherlands. Its momentum in subscriber number has recently been improving. Tele2 entered the Dutch market in 2001. In Feb 2009, Tele2 decided to switch its MVNO from the KPN's network to T-Mobile to improve its positioning having lost customers in the year of 2008. Tele2 bought some 2.6GHz mobile spectrum in April 2010 and we expect Tele2 to bid again for spectrum during the current mobile Dutch auction for 800MHz spectrum (see our repot Dutch Spectrum Auction: Getting Ready For Action: Buy Tele2, Stay Cautious On KPN). We believe that Tele2 could use a similar strategy in the Netherlands as it did in Norway where it started as an MVNO before becoming an MNO. Tele2 started as an MVNO in Norway in the early 2000s and found it hard as an MVNO to make a decent margin (Tele2 EBITDA margin is still below 10% in Norway) due to the difficulty in negotiating an attractive wholesale rate in market which was a duopoly. Tele2 decided to create a network JV with Network Norway another MVNO. Tele2 then acquired Network Norway. MVNOs in Norway are now on the decline. Tele2 is focusing on a multi-brand strategy (4 brands: OneCall for discount offers, Tele2 for best deal, Network Norway for SMEs, MyCall: for prepaid and ethnic) rather than rely on MVNOs and service providers.

Figure 28. Tele2 investing in subscriber acquisition at the expense of margin in Dutch mobile (In €m)



Source: Citi Research and Tele2

Figure 29. Focus back on growing mobile subs in the Netherlands (Customers in thousands)



Source: Citi Research and Tele2

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Notes

Appendix A-1

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