March 2011

Telecom operators

Super fast broadband: catch up if you can

- What will drive the take-off of super fast broadband? Competition rather than demand
- Cable operators are in the driving seat
- Incumbents need to invest in FTTH, even though economic returns are uncertain
- EUR18-40bn of additional capex yet to be announced
- Expect more partnerships and consolidation

Arthur D Little 125 years

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Executive summary

This 10th edition of the annual Exane BNP Paribas-Arthur D. Little joint report focuses on super-fast broadband in Europe[1]. Are operators about to announce more capex to deploy wider fibre networks to connect homes across Europe? Who does fibre benefit and who's under pressure? In preparing the report, which focuses on the consumer market, we have conducted 115 meetings with 94 organisations in the telecom-media-technology arena as well as local authorities and utilities across 16 countries.

– Super-fast broadband rollout is accelerating, with announced targets by incumbents pointing to 44% coverage by 2015 (FTTH and VDSL) versus 20% today.

– Consumer demand for faster speeds is yet to be proven, so the market is mainly driven by competition. In many markets, cable is in the driving seat, given the low cost and progressive DOCSIS3.0 deployment, with 55% of households due to be covered by cable's version of super-fast broadband in the next few years.

– Incumbents need to invest in FTTH, even though economic returns are uncertain. We estimate that for them, rolling out FTTH in large cities is just about neutral in terms of long-term ROCE (12% in 2021e versus the current average of 13-14%) – but they must do it. Indeed, in the long term, VDSL cannot compete against DOCSIS3.0, so telcos will at some point need to match cable operators' footprint with FTTH.

– In the nine countries that we have analysed, incumbents have yet to announce additional capex totalling some EUR18-40bn, corresponding to a risk of 250-500bp on domestic fixed-line capex/sales.

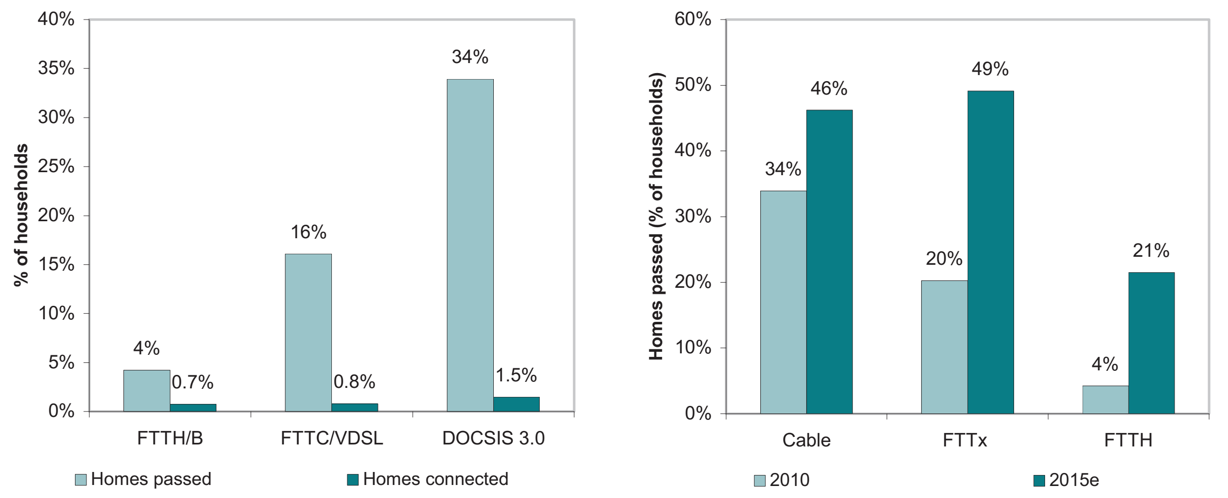
– Altnets face tough choices. Their best hope is to partner and cherry-pick (by city, by street) to optimise returns. Moreover, given the need for critical size, we expect the move to super-fast broadband to trigger market consolidation, with mobile operators playing an active role.

– More than for any other subject, super-fast broadband is very local – hence country scenarios will be very different.

Figure 1: Super-fast broadband – the race is on

Homes passed and homes connected*, 2010

Telcos need to catch-up with cable*



** In the nine countries studied i.e. Austria, Belgium, France, Germany, Italy, the Netherlands, Portugal, Spain and the UK*

Source: Arthur D. Little, Exane BNP Paribas estimates

[1] In this report, we consider that a broadband technology qualifies as super-fast when it offers download speed of at least 50Mbit/s, and has the potential for 100Mbit/s or more. Households are considered connected to super-fast broadband when they actually have access to 50Mbit/s bandwidth.

Super-fast broadband rollout is accelerating in Europe

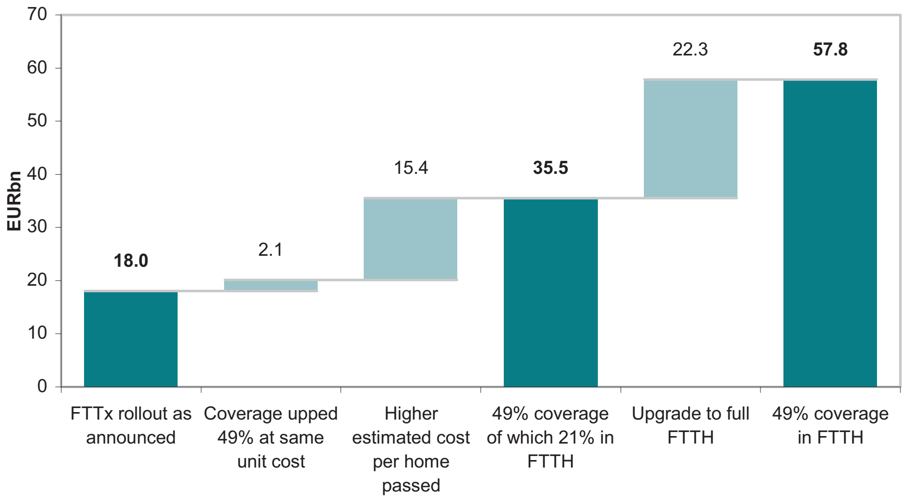
With only 1.5% of households connected via the telcos' super-fast broadband services in the nine countries that we have studied, Europe stands far behind the most advanced markets globally (49% fibre to the home penetration in South Korea, 37% in Japan). Super-fast broadband network coverage remains limited as well: 4% of households passed with fibre to the home (FTTH, offering commercial speeds of c.100Mbit/s), 16% with VDSL (often combined with FTTC i.e. fibre to the curb; speeds of c.40Mbit/s and potential to reach 50Mbit/s), and 34% with DOCSIS3.0, the advanced cable technology (speeds of c.100Mbit/s).

However, this is about to expand quickly: cable operators are upgrading more than 90% of their footprint to DOCSIS3.0, and incumbent operators have announced EUR18bn capex by 2015, rolling out FTTH to 16% of households and VDSL to another 28%.

EUR18-40bn of incremental capex yet to be announced

We expect fibre rollout in Europe to expand beyond the already announced plans. Our scenario points to EUR18-40bn of additional capex which has yet to be announced by incumbents in the nine countries studied. Even assuming that this can be spread over up to 10 years, it corresponds to an additional 250-500bp on incumbents' domestic fixed-line capex/sales.

Figure 2: EUR18-40bn of incremental capex yet to be announced



Source: Arthur D. Little, Exane BNP Paribas estimates

This is based on a forecast of 49% population coverage in the long term, as we expect incumbents to catch up with cable operators.

It also reflects a higher estimated cost per home passed than implied by incumbents' plans. The level of incremental capex strongly depends on the technology: the low end of the range is based on an optimised mix of FTTH and VDSL (21% coverage for FTTH, the rest in VDSL, pointing to average capex of c.EUR460 per home passed), while the high end is based on an FTTH-only rollout (c.EUR750 per home passed).

In reality we expect operators to rollout a mix of FTTH (in dense areas) and VDSL (in lower density areas), with the flavour of the mix by 2015 depending on specific market conditions. Long term we believe that VDSL is not future proof, but the timing of the migration to FTTH is difficult to assess – hence our range of estimates.

A market driven by competition rather than demand

We do not expect telcos to move to super-fast broadband because they see a great new demand-driven opportunity, but mainly because of market share dynamics: either the opportunity to gain, for the first movers, or the fear to lose, notably to cable.

Indeed, cable is in the position to offer faster speeds for the same price, an easy customer sell that telcos cannot afford to ignore:

– Today, commercial speeds on cable are similar to those offered by FTTH (median of 100Mbit/s) and clearly superior to VDSL (40Mbit/s) – and cable speeds will continue to increase in the coming years (500Mbit/s by 2015).

– In 2010, cable players have gained broadband market share in their footprint in Belgium, Germany, the Netherlands but also in France – and this is likely to continue.

– For cable, the move to super-fast broadband with DOCSIS3.0 technology requires limited incremental investment and hence is a profitable move. This explains why cable is leading the way today in terms of super-fast broadband coverage and will soon cover 46% of total households with DOCSIS3.0 (55% if we exclude Italy where there is no cable).

Fibre economics: challenging for telcos

For incumbents, rolling out FTTH is financially feasible, but challenging.

Based on our proprietary financial model, comparing the incremental revenue and EBITDA that can be expected from super-fast broadband to the related investments and costs, we find that in large cities the move to FTTH is neutral for an incumbent telco in terms of long-term return on capital employed. We estimate 2021e ROCE of 12% post-tax, assuming long-term penetration of 60% and a 50% retail market share. We take into account savings from decommissioning copper access lines in the long run. FTTH in low-density areas is unlikely to be profitable unless co-financed with other parties such as local authorities.

FTTC/VDSL provides an interim solution for the short to medium term. Rolling out FTTC/VDSL is much easier to justify financially for incumbents as the capex is only a fraction of that for FTTH. This route is the one chosen by many. However, we do not believe that it is future proof as traffic will continue growing and DOCSIS3.0 will not stop at 100Mbit/s – so in our view, VDSL will not be sufficient and operators will ultimately have to switch to FTTH, at least in the high-density areas.

Figure 3: Profitability of super-fast broadband rollout in our base case*

Type of rollout	2021e ROCE in base case	Comment
Incumbent, FTTH	12%	Feasible, but depends on market share
Incumbent, FTTC/VDSL	87%	Very profitable but not future proof
Altnet, FTTH	(13%)	Not profitable except with specific 'boosters'
Altnet, FTTB	(14%)	Not attractive
Altnet, wholesale	678%	Profitable** but loss of differentiation
Cable operator	38%	Positive outlook

** In a high-density area (large city), ** With the assumption that the regulatory context enables a profitable wholesale model; high return is indicative of low capex rather than significant value creation.*

Source: Arthur D. Little, Exane BNP Paribas estimates

Some hopes of ARPU upside

According to most companies that we have talked to, residential customers are not yet ready to pay a premium for super-fast broadband internet access. However, they are ready to pay for a better TV (HDTV, multi-room, etc.) and for multi-device connectivity. Super-fast broadband will therefore be marketed as a way to access triple-play (in countries with low triple-play take-up) or as “super triple-play” (in countries where triple-play is already prevalent).

Do additional TV services come with very high incremental ARPU? Industry participants doubt it, and we agree. We have taken a relatively cautious assumption (super-fast broadband triple-play ARPU at EUR53 in 2011e i.e. an increment of only EUR13 versus basic broadband), notably to reflect the risk that video-related revenues are increasingly captured by ‘over the top’ (OTT) players i.e. not the operators themselves. Even though we believe that Net Neutrality rules in Europe will be pragmatic and operators could be authorised to charge the traffic generators such as OTT players, OTT could still partly cannibalise operators’ TV ARPU.

Regulation is getting slightly clearer

In Europe, regulation is less supportive of investment than in Japan and South Korea, where governments are pushing super-fast broadband with heavy subsidies, or the US, which offers protection for private investment via a hands-off approach. Moreover, it is still not fully stabilised. However, the good news is that it is getting clearer – and clarity is key for investment decisions.

Partnerships required

There is no magic wand with which to increase ARPU, penetration or market share, so operators are looking at other solutions to improve the tough economics of super-fast broadband.

Sharing networks or using existing infrastructure (e.g. ducts) can cut capex by up 40%, completely transforming the fibre business model. Partnerships appeal both to incumbents and smaller operators, and potential partners include both other operators and local municipalities or utilities. There are already dozens of examples, notably in Germany, Switzerland, France, the Nordics, etc.

Altnets: cherry-picking, partnerships…

For altnets – including those supported by large mobile operators – rolling out FTTH or FTTB leads to negative returns in our (conservative) base case.

However, they can improve their financial returns by reducing capex and opex as much as possible (e.g. via a JV with peers and/or access to existing ducts) and by focusing their rollouts in very specific places (cities or even streets) where they can count on a high penetration. This could be a winning move if the environment is favourable – notably regulation and financial incentives. If and when available, the wholesale business model can be a profitable one, but with the strategic risk of losing any differentiation in the market.

…and more market consolidation

In the nine countries studied there are still more than 15 fixed broadband providers with market shares of 10% or less. Given the need for critical size, we expect more market consolidation.

Mobile players are already present in fixed broadband: they have developed or bought many of these smaller altnets. Given their superior financial clout, their increasing need for fixed broadband infrastructure to offload mobile data traffic, and their growing need to build quad-play customer propositions (in most markets), we see mobile players as the natural consolidators for many of the key remaining independent altnets.

Each local market is specific

We have assessed the scenario for each country based on our local interviews as well as our analysis of factors such as 'market readiness' (broadband penetration; usage of advanced internet services; HDTV equipment), the current coverage and take-up and plans that have already been announced, and the level of competitiveness (notably between the incumbent and cable), plus the impact of regulation.

We conclude that the countries most likely to see rapid rollouts and take-up are the Netherlands, Portugal, Belgium and the UK. The slowest is Italy.

– In the **UK**, super-fast broadband take-up is likely to develop relatively quickly. BT has an ambitious plan and cable is the only competing infrastructure, a much more concentrated market structure than on 'basic broadband'. The move is positive for infrastructure players Virgin Media and BT – which are likely to gain retail market share and, in the case of BT, to increase wholesale revenues.

– In **Germany,** we expect the speed of rollout and take-up of super-fast broadband to be moderate; cable and local operators have an early lead and Deutsche Telekom is focused mainly on VDSL. Visibility is low given the market fragmentation. We expect more partnerships and M&A.

– **France** presents an uncertain outlook in super-fast broadband. It could be an opportunity for France Telecom to regain market share in dense areas. However, the outlook is uncertain given the participation of altnets in the FTTH rollout, the potential of cable to improve its position through partnerships, and the increasing competition ahead of Iliad's mobile launch in 2012.

– The **Belgian** market is very advanced in super-fast broadband and looks safe. However, cable is really in the driving seat, and Belgacom may need to spend more to move to FTTH faster than initially expected.

– The **Netherlands** is the most advanced market. Cable operators have the first mover advantage in super fast broadband, with 90%+ DOCSIS3.0 coverage. In response KPN is rolling out FTTH to build a superior offering, through an "open network" approach that mitigates the capex risk.

– **Portugal**: Following an important capex push driven by competition and politics, Portugal is by far the country with the largest FTTH coverage. Zon, the main cable operator, started commercial FTTH services in Q1 2009 and Portugal Telecom in Q4 2009. In 2011, the incumbent will continue to expand its FTTH coverage but given the tough macro-economic environment, customer take-up is likely to progress slowly.

– The **Spanish** super-fast broadband market has not really started. Ono's upgrade could lead to some acceleration. Telefonica could step-up its efforts progressively, but risks must not be overstated as the incumbent remains in the driving seat.

– **Italy**: The lack of cable competition makes operators reluctant to invest without a clear regulatory framework and signals in terms of market demand.

– **Austria**: There are currently no plans for broad FTTH rollout in Austria due notably to the fierce competition and unfavourable regulation. In fixed broadband cable has an edge versus DSL in large cities, but the broadband market is mainly characterised by a unique level of fixed-mobile substitution.

Acknowledgments

We want to thank everyone from outside Exane BNP Paribas and Arthur D. Little who contributed to this project. We would particularly like to thank all those that we interviewed at the companies listed below, including fixed and mobile operators, service providers, retailers, internet companies, media groups, advertising agencies, software developers, equipment manufacturers and regulators.

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1&1, A1 Telekom Austria, Abertis Telecom, Belgacom, Bouygues Telecom, BT, Cablecom, Colt, Deutsche Telekom Group, Deutsche Telekom T-Home, EasyNet, Etisalat, Everything Everywhere, EWTel, Fastweb, France Telecom Group, GEO, GSMA, GTS Novera, Iliad, KBW, Korea Telecom, KPN, Mobistar, Novabase, Numericable Belgium, O2 CZ, O2 UK, ONI, OpenGate, Optimus/Sonaecom, Orange Austria, Orange France, Orange Slovakia, Orange Spain, Orange Switzerland, Portugal Telecom, QSC, SFR, Skanova, Slovak Telekom, Sunrise Communications, Swisscom, Telecom Italia, Telefonica, T-Mobile Austria, Telenet, TeliaSonera Group, UPC Austria, VATM, Versatel (Germany), Virgin Media, Virgin Mobile UK, Vodafone D2, Vodafone Group, Vodafone Portugal, Vodafone Spain, VOO, Zon Multimedia.

Media and internet

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Infrastructures

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Regulators

AGCOM, ARCEP, RTR, IBPT, PTS, undisclosed regulator

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