

22 June 2020
Telecoms

Fibre towards a Gigabit society

Coverage diverges significantly in Europe



Fixed networks have gained significant importance during the outbreak of Covid-19. Fixed data usage surged by up to 80%, as a result of people working from home and increased demand for home entertainment. We believe that one of the effects from Covid-19 is that many companies will adopt best practices learned during the lockdown period and that these will be structurally incorporated in their business models. This includes working more from home. Therefore, we expect there will be more demand for higher network speeds. Fibre-to-the-home (FTTH) networks will become increasingly important in a Gigabit society, but there is still a large divergence in coverage among European countries and operators need to invest significantly to make their networks future-proof.

Telecom companies are increasingly focusing on FTTH and cable operators are upgrading their networks to Docsis3.1 in order to be able to offer 1Gbps broadband download speeds in the future. FTTH passive and active technologies are also able to support the back-haul and front-haul telecom networks more efficiently when rolling out 5G. A fibre network is a long-term investment, with an anticipated lifetime of at least 25 years. Furthermore, quality infrastructure and higher download speeds are an important element in the convergence strategies of providers as consumer experience is key.

In Europe, there is still a big divergence in FTTH coverage among the countries. Nations with high FTTH coverage are Latvia, Spain and Sweden. Countries with limited coverage include the UK, Germany and Belgium. BT Group and the Belgian incumbent Proximus have recently announced they will accelerate their fibre rollout plans, while in Germany Deutsche Telekom uses super vectoring to offer high-speed internet. In this report we will largely limit ourselves to the fibre rollout plans of European telecom companies.

The impact of Covid-19 on the operational performances of telecom companies has been limited thus far. When looking at the investments plans of the operators, we did not see strategic changes compared to the start of the year and this includes the network upgrade plans. Telecom companies entered this uncertain period with solid balance sheets, and this has not changed following the 1Q20 results. We maintain our view that the sector is defensive in an overall sector allocation.

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Large divergence in FTTH coverage in Europe

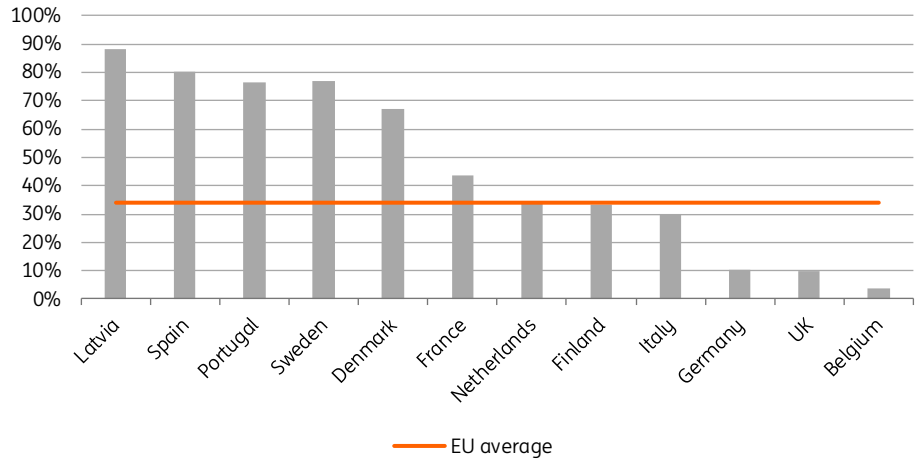
In Europe, there is still a big divergence in FTTP (fibre-to-the-premises) coverage between the different countries. As can be seen from Figure 1, coverage is the highest in Latvia,

“Latvia, Spain and Portugal frontrunners”

Spain, Portugal and Sweden. Latvia’s overall coverage stood at close to 90% in 2019, according to the DESI 2020 report by the

European Commission. Both Latttelecom (now TET) in Latvia and Telefónica in Spain began rolling out fibre in the aftermath of the financial crisis in 2009.

Fig 1 FTTP (fibre-to-the-premises) coverage in selected European countries



Source: 2020 DESI report by the European Commission

European countries with very limited FTTP coverage include the UK, Germany, and Belgium. BT Group and the Belgian incumbent Proximus recently announced they will accelerate their fibre coverage, while in Germany Deutsche Telekom mainly uses super

“Belgium, the UK and Germany lagging”

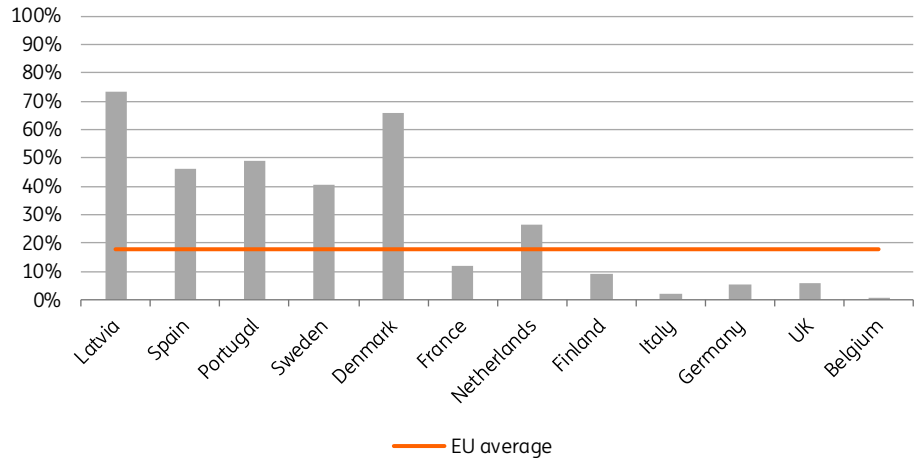
vectoring to offer high-speed internet. Overall coverage in Italy has improved significantly in recent years as Telecom Italia started to upgrade

its domestic fixed network as of 2015. Also, Open Fiber has invested significantly in rolling out its fibre network and offers services on a wholesale basis. Coverage in France, with a focus on the densely populated areas, is above average, while the Netherlands and Finland match the European average. We take a closer look at the fibre rollout plans of some of the major European telecom companies later in this report.

Coverage in rural areas still lagging significantly

Telecom companies start rolling out fibre in areas with dense populations and where the economic rationale is the highest. Operators do extensive analysis on consumer behaviour and preferences to assess pick-up rates of the (new) fibre product in order to decide which areas to prioritize. This is in addition to the design and planning of the construction of the network.

Fig 2 FTTP coverage in rural areas in selected European countries



Source: 2020 DESI report by the European Commission

When looking at rural areas, coverage ratios are still significantly lagging. For example, in Spain overall FTTP coverage is close to 80% and just over 45% in rural areas, but the latter is still significantly above the European average. Spain is now at a stage where the

“Still a big difference between densely populated and rural areas”

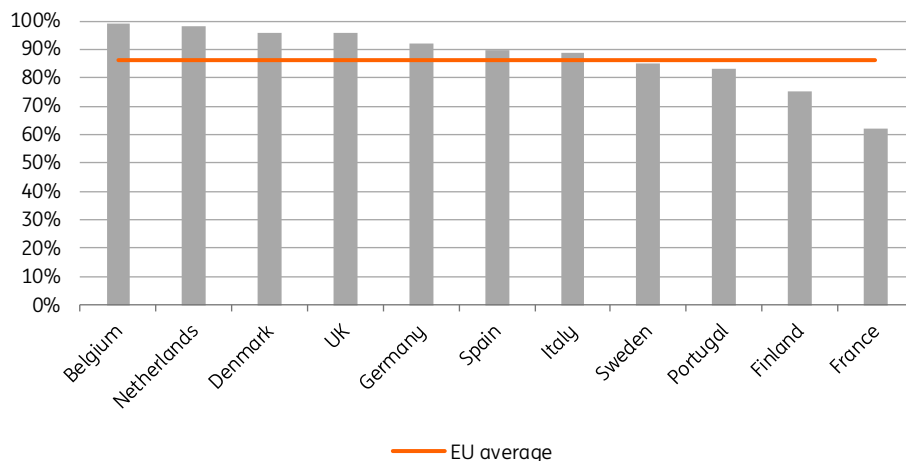
focus is on rolling out fibre in less densely populated areas. Latvia scores the highest, with coverage of over 70%, albeit that this number has been stagnant in recent years. Of

the larger European countries, again Belgium, the UK and Germany score low. This is also the case for Italy, as the Italian operators initially started rolling out networks in densely populated areas and economically attractive cities and regions. Also, France ranks below the European average in rural areas.

Next generation access networks more widely available

We also look at coverage by next generation access networks (NGA). This includes FTTH, FTTB (building), VDSL and cable coverage via Docsis3.0 and 3.1. This gives a more comprehensive picture of the download speeds that are available to consumers. VDSL and subsequently super vectoring is extensively used by Deutsche Telekom to offer download speeds of up to 250Mbps. Furthermore, cable companies are upgrading their networks to Docsis3.1 in order to offer speeds as high as 1Gbps.

Fig 3 Coverage NGA networks selected European countries



Source: 2020 DESI report by the European Commission

The Netherlands and Belgium have extensive cable coverage, while it is non-existent in Italy. To improve the overall offering of ultra-fast broadband services for consumers and create more competition, regulators could decide to open cable networks on a

“Extensive cable coverage in Belgium and the Netherlands, non-existent in Italy”

wholesale basis in order to create more competition, resulting in lower prices for consumers. In Belgium this is for example the case for Telenet, while in the Netherlands the

Dutch Trade and Industry Appeals Tribunal, the highest administrative-law court in the Netherlands, has accepted VodafoneZiggo’s appeal and has annulled the previous decision by ACM to open its cable network to third parties.

Better availability of FTTH results in higher take-up

Higher-quality networks and accompanying higher speeds are also an important pillar in the telecom operators’ convergence strategies. The focus on bundled products results in an increase in consumer satisfaction (net promotor scores), an increase in ARPU and a

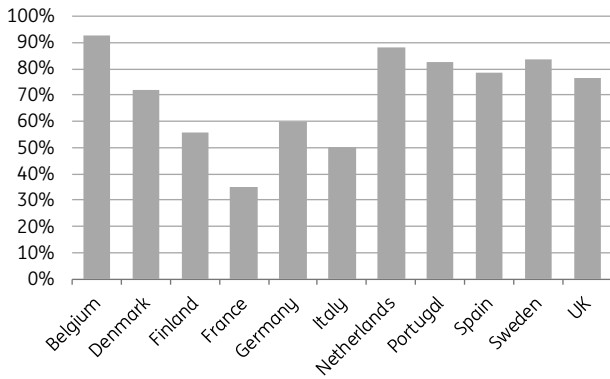
“High-quality networks are an important pillar in convergence strategies”

reduction in churn, thus lowering retention and acquisition costs. By shoring up the customer base it also lays the foundation to upsell additional services. Furthermore, FTTH

broadband services can be sold at a premium compared to traditional broadband lines. In the longer run, the legacy copper networks and related infrastructure can also be decommissioned.

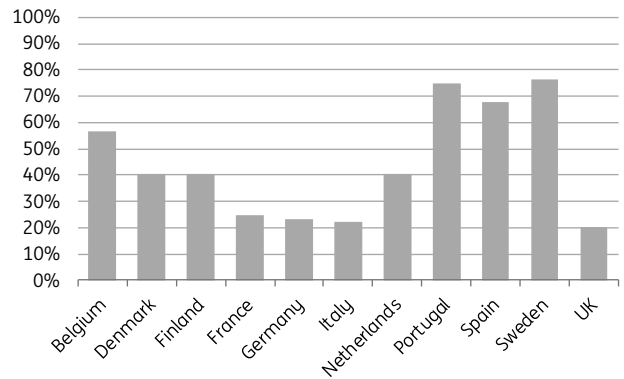
The share of fixed broadband services with download speeds of at least 30Mbps is high in the Netherlands, Belgium, Sweden and in the UK, while also Germany ranks above the European average. In Belgium, the UK and Germany, (V)DSL is still the prevailing broadband technology.

Fig 4 Share of fixed broadband subscriptions >= 30Mbps



Source: 2020 DESI report by the European Commission

Fig 5 Share of fixed broadband subscriptions >= 100Mbps



Source: 2020 DESI report by the European Commission

The share of fixed broadband services with at least 100Mbps is, as expected, high in countries with an extensive FTTH coverage. It includes Sweden, Portugal and Spain. This is confirmed by the numbers of the FTTH Council Europe in its Panorama report. The

“High take-up of FTTH in Sweden and Spain”

take-up rate of FTTH (defined as number of subscriptions as a percentage of homes passed) is for example high in Sweden (65.7%) and Spain (63.4%). This compares to 32.8% for Germany, 18.2% in the UK and 13.5% in Italy.

The average for the EU28 stood at 43.3%, according to the FTTH Council Europe. These numbers are as of September 2019.

Fibre rollout plans by incumbents

Belgium: significantly lagging in FTTH coverage, forcing Proximus to accelerate rollout

Belgium has good overall coverage of fixed broadband, but it is mostly DSL and VDSL based for the incumbent operator. FTTH coverage is very limited at this stage. Cable coverage is high and operators, including Telenet, are rolling out Docsis3.1 to offer speeds up to 1Gbps.

In Belgium, network competition is strong with also the cable network opened and the wholesale rates set by the regulator make it attractive for Orange Belgium to offer a fixed only broadband offer. This could pose a risk to the convergence strategies of Proximus and Telenet as it will test the pricing points at which consumers are willing to unbundle. Therefore, Proximus has decided to accelerate the fibre rollout significantly. The company targets to connect 800,000 additional homes by 2025 and 1m by 2026 versus the initial plan. Overall, Proximus aims to have connected 1.1m homes with fibre

“1.1m homes connected to fibre by 2022 and 2.4m by 2025”

in 2022 and 2.4m homes by 2025, versus 2030 previously. This compares to only c.300k at the end of 2019. In order to achieve these targets, Proximus needs to scale up to connect more

than 400k homes to fibre per annum. This plan increases the company’s investment budget significantly. The company foresees a maximum annual capex of €1.3bn until 2025 (2019: €1,091m and historically also c.€1bn). Fibre will account for 40% of the total capex envelope by 2025. The company plans to finance the rise in investments via: an increase in total debt by up to €600m, whilst maintaining a strong credit rating; asset disposals with total proceeds of up to €700m and exploring strategic partnerships to co-invest. Re-leveraging will start from a very solid financial position with net debt/EBITDA standing at 1.3x at the end of 2019.

France: strong FTTH coverage in dense areas, with rural needing to catch up

Supported by the national broadband plan, FTTH coverage in very densely populated areas is high. According to the DESI 2020 report, it stood at c.90%, while in the rural areas it was only c.15%.

At its capital markets day in December 2019 Orange presented the next phase of its FTTH rollout plan. The company expects it can offer FTTH to more than 65m households across its footprint in Europe, including Spain, by 2023, either via its own or third-party networks. This compares to c.40m at the end of 1Q20.

Zooming in on the plans for France, Orange targets to deploy 19m FTTH lines in the private areas, including the medium-density regions, by 2023 via its 100% owned network (1H19: c.10.4m). In addition, Orange wants to increase the number of lines in the PIN (public investment) areas to 4m (1H19: c.0.4m). This covers the connections

“High coverage in densely populated areas, but still low in rural”

belonging to local authorities and for which Orange is the concession holder. With these projects the company could team up with partners via Orange Concessions to mitigate

the impact on capex. In addition, the company targets 5m and 8m 3rd party lines, possibly co-financed by Orange, in the private and public investment areas by 2023. The strict lockdown measures in France resulted in a slowdown or postponement of investment projects. This includes the fibre-to-the-home rollout plans. In Spain and Poland, the company is creating FiberCos to potentially attract third parties for the further FTTH rollout.

Germany: transition needed from super vectoring to FTTH

Germany is one of the countries in Europe with a low FTTH coverage. The prevailing technologies used for fixed broadband services rely on DSL, VDSL(2) and cable. Vodafone has given Telefónica Deutschland whole access to its cable network for broadband services, a condition to get the green light for Vodafone's acquisition of UnityMedia.

Incumbent Deutsche Telekom has been focussed on rolling out FTTC (fibre-to-the-cabinet), which has now largely been completed. The company is now focussed on

“target to connect 2m homes per year”

combining FTTC with super vectoring to offer download speeds of up to 250Mbps. Deutsche Telekom needs to make the transition to FTTH.

At the end of 2018, 1.3m homes were passed with FTTH/B. This rose to 1.6m at the end of 2019. Going forward, the company targets an annual run-rate of 2m additional homes passed.

Next to its own fibre rollout, Deutsche Telekom is teaming up with utility EWE via Glasfaser NordWest. The 50/50 joint venture targets up to 1.5m household in parts of Lower Saxony, North Rhine-Westphalia, and Bremen with total investments amounting to up to €2bn over the next 10 years.

In Germany, Deutsche Glasfaser is becoming an increasingly important player in FTTH and is growing strongly. At the end of 2019, the company passed 630k homes with FTTH and management targets more than 6m homes passed with total planned investments amounting to €7bn in the medium term. To reach this mark, Deutsche Glasfaser attracted EQT and OMERS as its new shareholders in early 2020. They will replace KKR and Reggeborgh, the founding investor. Deutsche Glasfaser merged with inexo, which was already acquired by EQT in 2019. The company has wholesale agreements with Vodafone and Deutsche Telekom in certain regions.

Italy: catching up with rest of Europe

In Italy, FTTH coverage has expanded in recent years. Historically, the country has been lacking network competition with no cable presence. Telecom Italia started to upgrade its domestic fixed network in 2015, resulting in high capex requirements with capex/sales ratios of more than 25% in 2015, 2016 and 2017. Open Fiber, also founded in 2015 and smaller than Telecom Italia, started to roll out its fibre network, offering services on a wholesale basis. The joint venture is 50/50 owned by utility Enel and state investor Cassa Depositi e Prestiti.

In Italy, traditionally more a mobile only country, the awareness of the importance of fixed networks to society has grown during Covid-19, also with the government. The administration announced a €2.7bn public funding scheme. It is targeted at:

- Schools: €400m is available to connect 32,213 school buildings, with targeted speeds of 100-1,000 Mbps) over the period 2021-2023. The public tender is set for September 2020 and is subject to EU approval.
- Vouchers: €1,146m is assigned for incentivising families and companies to take ultra-broadband. The size of the vouchers ranges from €500 for low income families, €200 for other families and €500 (30Mbps) or €2,000 (1,000Mbps), respectively, for companies.
- Grey areas: €1,126m for infrastructure in selected industrial zones in so-called “grey areas” (the Italian government has identified white, grey and black areas under the European Commission's framework). Targeted are cities with a higher density of businesses. The expected tender is September 2020 with the rollout in 2021-2023.

Telecom Italia is moving to the next phase of its fibre rollout plan. Currently, 81% of the population is covered by FTTC and the company targets to reach c.40% of the population with FTTH by 2023 (c.9.7m household connected in c.500 municipalities) and to subsequently grow to 13.5m households by 2026, resulting in a coverage ratio of more than 55%. This will be supplemented by the rollout of FWA (fixed wireless access) to reach 20% of the fixed customer base in the long term (2030). Telecom Italia targets national coverage with 5G by 2025/2026.

In order to achieve its FTTH targets, Telecom Italia is planning to team up with KKR. The private equity firm intends to acquire a 40% stake in the company's secondary fixed network. This newco encompasses all of Telecom Italia's passive network infrastructure from the cabinet to the home (both fibre and copper). The newco will going forward act

“Teaming up to accelerate FTTH rollout and possible merger with Open Fiber”

as a wholesale operator offering passive copper and fibre access services to Telecom Italia and other operators. The newco is valued at an equity value of €4.2bn, implying an enterprise value of €7.5bn. This newco could subsequently

be merged with Open Fiber. The Italian government could be more susceptible to the argument to have one nationwide network post Covid-19. Open Fiber's shareholders are Enel (50%) and Cassa Depositi e Prestiti (50%). The state investment fund also holds a 9.9% stake in Telecom Italia. Enel recently confirmed to have received a non-binding offer from Macquarie for its stake in Open Fiber.

The Netherlands: more work needed to get the top

The Dutch fixed income market is well developed. Cable coverage is very high at c.95% and operators, including VodafoneZiggo are expanding Docsis3.1 to be able to offer download speeds of up to 1Gbps.

KPN launched its plan to accelerate its fibre rollout at its Capital Markets Day in November 2018. The company targets an additional 1m households connected to fibre by the end of 2021, resulting in a coverage of more than 40%. At the end of 1Q20, KPN added 177k since the start of 2019, with c.2.5m households now connected, equalling a

“accelerate pace of fibre connections to reach more than 40% coverage by 2021”

coverage ratio c.30%. KPN will therefore start to ramp up the pace of fibre connections to reach the stated goal by the end of 2021. The company offers fibre access on a wholesale basis to other

operators. In addition, KPN expects its 5G network to be 100% 5G ready also by the end of 2021.

With respect to speeds achievable of the network, c.45% of the households will have access to more than 1Gbps at the end of 2021, compared to 30% at 1Q20 and 70% of the connections to have access to more than 200Mbps, compared to 60% at 1Q20. KPN has implemented different techniques in its network. This includes FTTH, vectoring and super vectoring.

KPN has not changed its investment plan following Covid-19. Capex is expected to be stable at c.€1.1bn per annum over 2019-2021. With respect to fibre rollout, KPN could focus more on homes passed and less on homes activated in the short-term as the latter requires access to premises which is more difficult due to Covid-19. In addition, KPN will look at smaller acquisition possibilities to accelerate its fibre rollout plans. For example, the company recently announced the acquisition of GiessenlandenNet, with the acquired network remaining an open network accessible to other providers. No financial details were disclosed.

Spain: leading FTTH coverage in Europe

Spain has one of the most advanced fibre network infrastructures in Europe. Telefónica started upgrading its network in 2009, as it saw the opportunity to differentiate itself in a very competitive broadband market at the time. Also, the conditions to roll out fibre were supportive. For example, the telecom operators had access to infrastructure, including for example manholes, ducts, poles and access to buildings, with landlords obliged to give access. With the regulator promoting network competition and investments, Vodafone and Orange followed suit. This resulted in Vodafone acquiring Ono for €7.4bn in 2014 and Orange taking over Jazztel for €3.4bn that same year. Given

“Nationwide coverage targeted by 2024”

the already high coverage, Telefónica’s domestic capex needs have already peaked. The company passed 21.3m premises with fibre

lines in Spain at the end 2019. The incumbent targets to roll out FTTH to 100% of the Spanish population by 2024.

With fibre coverage now mainly a white spot in the rural areas, the Spanish operators are now also focussing on wholesale agreements to complement their presence. Telefónica is obliged to offer access in areas which are deemed non-competitive by the Spanish regulator CNMC, while areas that are designated as competitive, as more companies offer high speed broadband either via FTTH or Docsis3.0 in those regions, will be excluded from regulation. Telefónica already has wholesale arrangements in place with both Vodafone and Orange in Spain.

UK: significant FTTH investments needed with BT Group accelerating rollout

The UK has also been lagging with respect to FTTH rollout. It only stood at 10% in 2019. Therefore, BT Group announced on 7 May 2020 it will accelerate its fibre rollout plans, also supported by a more favourable regulatory environment. The UK incumbent now targets 20m premises to be connected to fibre by the mid-to-late 2020s, including a

“20m new premises by the mid-to-late 2020s, 2-3m new connections per year”

significant coverage in rural areas. This is a substantial step-up versus the old plan of 15m premises by the middle of this decade. Premises connected to fibre stood at 2.6m at the end of

fiscal year 2019/20. This implies that 2-3m new premises per annum need to be connected, at an average build cost of £300-400 per premise passed.

Other players are also stepping their efforts. For example, CityFibre has a £4bn capex plan in place and is targeting up to 8m connected premises and recently also announced it will accelerate its network construction. This is supported by the recent acquisition of FibreNation from TalkTalk for £200m. CityFibre is owned by Goldman Sachs and Antin Infrastructure.

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