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Very High Broadband –FTTx- in the local loop
Moving Europe?

Abstract

- **Europe is characterised by numerous isolated FTTH initiatives, though major impulses**
- **National regulators are increasingly getting involved to foster NGA networks**
- **European Commission is going to announce shortly in 2008 that it recommends to national regulators to entice operators to open their new network**
- **Operators need to improve their ARPU thanks to new premium offers**

A concrete move to FTTH?

In Europe the number of homes and buildings passed by fibre grew faster in 2007 than previously, reaching 4.9 million households at the beginning of 2008 (+79 % compared to mid 2006)[1]. On a statistical point of view, it seems that now FTTH is finally coming in Europe. During 2008 bmp TC has conducted a dedicated report in Europe (the bmp TC European FTTH Atlas 2008) and has identified and detailed major 122 FTTH considering operators (if we except much smaller deployments run by municipalities such as in Sweden). However, we can still wonder if the FTTH market in Europe will be evolving as fast as it could have been foreseen. In Europe, FTTH developments have been spoken about for years but in fact there were few concrete deployments up to recently.

Indeed, regarding the number of households passed and its growth, Europe is still lagging behind countries such as the US, as Japan with 24% of its households connected and as South Korea with 37%[2]. The US now have 3.76 million FTTH subscribers, up 76% year-on-year. Fibre networks indeed have been deployed over 13.8 million homes in North America, up from 9.55 million a year ago. FTTH is fast becoming the technology of choice for receiving high-bandwidth internet and superior video services. Average data download speeds in North America for FTTH subscribers are continuingly rising – 7Mbps from 5.2Mbps a year ago – as providers increase available bandwidth in their services offers.[3]

In Europe, up to now, most of the projects which might have outcome into massive implementation seem to remain at a trial step.

These trials are not yet significant in number of households passed.

For example: in the region of La Manche in France, where the public authority is very much driving the development of broadband infrastructures and is seen as a pioneer within France, the project FTTH will be including 26.000 households the cities of Cherbourg and Saint Lô by September 2009, with the forecast of some 80.000 customers to be passed by 2011. Of course others might result in more significant numbers (e.g the project of the public authority Conseil Général des Hauts de Seine with potentially more than 800.000 households within 6 years).

In France where the announcements were done proactively by all the operators, all deployments are still very limited to some major cities (Paris, Marseille…) and have not been further developed.

Besides, if some projects remain at a trial step, some others have not even been implemented because the activities had not been conclusive. Optron in Latvia that launched a pilot project in May 2007 is a representative example as they have given up this project since then for viability reasons. Quite some projects have never been come to reality, as seen with the case of the city of Varazdin. The municipality has been intending since last year to deploy FTTH and yet it has not managed to find partners for this project; there has been no implementation until today. This lack of means has stopped the city from launching its FTTH deployment trial.

All this might explain why Europe is today more characterised by numerous isolated and small-scaled projects than by some massive implementation.

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[1] Idate, February 2008
[2] Ftth council, July 2008
[3] FTTH Council Report, September 2008

Major impact of the regulation

Costs for connecting the end user with fiber remain for sure one of the main barriers, 60% to 80 % of the investments has to be done for the network and optical infrastructure[4]. In a few European countries such as in Scandinavia, the costs per passed user even climbs up to €2000 or €3000[5]. Studies claim that in France, more than € 3 billion is required to reach 7% of households with FTTH[6] and that hooking up every home in the U.K. with a dedicated fiber connection would cost € 36,5 billion[7].

FTTH developments are surely driven by continuous reductions in equipment costs, which make the technology more affordable for telecom actors but other factors have major influence.

Among others, public authorities have increasingly taken the role of promoting very high broadband infrastructure and been implementing their own FTTH networks, which are meant to be open and neutral towards the operators. Quite a significant number of public driven projects have been developed in Europe (about 30 significant projects in big European cities).

However the major role is still awaited by the private operators, which are supposed to undertake the most of the investments. A major reason for the late uptake by European incumbents remains the potential threat of having to unbundle the new investments in favour of challenging operators. For alternatives that want to implement fibre, access to ducts and dark fibre infrastructure are decisive issues for setting up the business case, the incumbent being mostly in a (more) favourable position.

The US has shown the potential impact of regulation on the development of FTTH activities. In October 2004 the regulatory authority FCC clarified that new fibre network needed not be shared with competitors. As a result, the U.S. FTTH market represents currently 3% of broadband customers with 1,9 million subscribers at the end of 2007[8]. The telecom actor Verizon has already passed 10 million households in 2 years of roll-out through the country[9]

and along with big band leaders AT&T and Verizon with their respective U-Verse and FiOS roll-outs, a growing group of independent telephone and regional cable operators are also taking the FTTH plunge. That seems to show that the US market is experiencing a significant growth.

Clearly the issue of FTTx/H has to be embraced by regulatory authorities. This issue is in discussions in many markets be it Sweden, Germany or the UK[10]. However the case of KPN, the Dutch incumbent, which plans to open its new VDSL and FTTH network to competitors without having to seems rather unique in Europe. Swisscom seems to have made similar undertakings, foreplanning to share its infrastructure to be deployed with 3 alternative operators.

In this context the European Commission has just launched a public consultation on the regulatory principles to be applied by EU Member States to Next Generation Access broadband networks (NGA). The objective of a common regulatory framework for NGA is to foster a consistent treatment of operators in Europe and thereby ensure the necessary regulatory predictability to invest. The Commission is suggesting definitions for harmonized categories of regulated services, network access conditions, rates of return and appropriate risk premiums. The Commission proposes that national regulators enable access to the ducts for alternative operators that are willing to deploy their own fibre or to offer services over the existing loop. But due to the significant investments for FTTH deployment, the European Commission plans to propose a risk premium for investors other than incumbents. The public consultation will be open until 14th November 2008 and the Commission should then finalise the Recommendation in the light of comments received and formally adopt it in 2009.[11]

Only a few regulators are currently starting to settle a clear legal frame. For instance the UK regulator Ofcom has published its proposals for the introduction of super-fast broadband to UK homes and businesses. Ofcom's plan of action should encourage further investment while promoting and sustaining competition. One of the main elements of Ofcom's proposals is to create a clearly defined regulatory environment for next generation services, including developing standards for wholesale

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[4] ARCEP indications, May 2007
[5] bmp TC 2008
[6] Ectaportal, June 2008
[7] Lightreading, September 2008
[8] OCDE, end of 2007
[9] broadbanduk, April 2008

[10] Ectaportal, June 2008
[11] Europa Information society, September 2008

products, allowing pricing freedom and enabling transition to new fibre networks. Results of the consultation are expected in early 2009.

Concerning the French alternative operators it can be noted that they have been awaiting the regulation to be in place before launching FTTH (as the incumbent France Telecom which has postponed the launch of its massive FTTH deployment to 2009). In September 2008, SFR and Orange came to an agreement to mutualise their optic fibre network after several debates. The terms of this agreement enabled to Orange to rent SFR's infrastructures and vice versa. But the alternative telecom operator Free considers this agreement as unfair[12].

For a few months the French regulator ARCEP has been working on the technical details of the FTTH deployment, such as methods for performing work on the premises, the location of a shared access point and technical options for sharing the last part of the line.[13].

In October 2008 the French Parliament and the French regulatory authority ARCEP took major steps in defining a regulatory framework that aims at achieving widespread deployment of Fibre to the Home.
This includes, among others, obligations on all operators to meet reasonable requests for access to in-building fibre (at an access point called mutualisation point to be defined), an ambivalent position on fibre unbundling beyond the private property portion, a formalised civil infrastructure access obligation on France Telecom, and a decision not to mandate wholesale broadband access over fibre[14].
Most of the ducts in France are not completely filled up with copper or fiber lines and allowing open access to them should lower the costs for other operators and encourage them to roll out more fiber networks[15].

In any case, NGA will need a change in regulatory paradigms. The issue of access regulation in a NGA context no longer is how to provide access to existing network elements or to existing infrastructures but how to structure new network elements such that efficient access opportunities do emerge in Europe.

Which measures could be taken to entice FTTH implementation?

A deployment of FTTH for incumbents means a return on investment in only decades rather than years (about 13 years according to ETCA). As a paradox, incumbent operators are the sole actors to be able to profitably roll out FTTH lines to large parts of Europe with their extensive infrastructures and customers bases. In average incumbents can save up to 30% compared to stand alone operators[16].

Nationwide NGA fibre roll-out would neither be profitable in France, nor in Sweden or in Germany. Even in profitable roll-out regions, the degree of NGA replication is limited to very dense areas where solely one, in the utmost 2 or 3 fibre operators can expect viable business. Regulatory measures and proper access products are a prerequisite for a competitive NGA market and can increase the degree of replication significantly. However duct access is not sufficient to develop potential competition, especially when considering FTTH[17].

However the Dutch former monopoly fixed line operator KPN which has announced in July 2008 that it was planning to open its fibre-optic infrastructure to rival operators justifies its decision by claiming that they consider it as the best way to make sure they get a full utilisation[18]. It seems to suppose that incumbents can be able to make a profit from opening their networks to competitors.

It can be besides noticed that several incumbents have recently announced their intentions to deploy fibre network such as Swisscom which in July 2008 announced its intention to invest in an upgrade of its access network[19] or BT with Openreach, the separated wholesale arm of UK incumbent, that has announced a 6-year FTTH deployment plan with the aim to cover 95 to 99% of the population by 2014[20].

Given that the business case for fibre has moved to national socio-economic requirements rather than the economic returns from Internet access[21] it seems logical to allocate a key role regarding FTTH dynamics to public authorities.

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[12] ZDNet, September 2008
[13] Telecompaper, October 2008
[14] T-Regs, August 2008
[15] Muniwireless, September 2008

[16] FTTHnews, August 2008
[17] Ectaportal, June 2008
[18] Telegeography, July 2008
[19] ftthcouncil, July 2008
[20] fiberevolution, April 2008
[21] FTTHnews, August 2008

Thus another solution for NGA actors such as utilities or other organisations outside the telecom industry could be the creation of an open NGA networks that any third party could use to offer any services it wanted. Public authorities are ideally placed to cover all or part of such investments since they are used to long-term investments in other sectors. Moreover several governments have pledged support for fibre roll-out through public funds like Greek government has just announced.[22]

The Finnish government has also claimed its intention to offer high speed broadband connections to nearly the entire nation by the end of 2015, with the government planning to fund up to a third of the total investment needed (so around €67 M). The remaining costs are expected to be covered by operators, municipalities and financial support from the European Union[23].

We can finally notice the example of the Swedish country of Orebo which is set to become the most densely-fibred country following an agreement between the government and the incumbent Telia Sonera to roll out FTTB and FTTH to every households in 60 towns with a population greater than 200. But these deployments remain exceptions and today most of the remote areas in Europe are not concerned by any FTTH deployments.

Nevertheless if incumbents share the advice that they need help from the government for remote areas, they are more reluctant for an intervention in major cities, in densely populated areas where they stand to make the greatest return on any investment in new infrastructure. This is a view shared by cable operators and some alternative operators that are keen to use network ownership to set their services apart from rivals'.[24]

Finally we can imagine new partnerships to implement FTTH at lower costs. For instance in the Netherlands, the development of FTTH have shown the arrival of a new kind of market entrant: Real Estate financers investing in local loop networks. The first entrant in the Netherlands was ING Real Estate, who, together with Reggefiber, 5 housing corporations and the municipality of Amsterdam, invested in Glasvezelnetwerk Amsterdam[25]. Of course, this implementation model does not enable to think about a complete and national FTTH deployment but it can be seen as a further way to increase FTTH penetration by giving a partial solution to the problems of heavy investments for its implementation.

Which could be the services which might enable to get a quicker return on investment?

Fibre based broadband access is considered the ultimate and most future-proof last mile platform since its capacity for high bandwidth is unmatched by any other delivery platform. It should represent an opportunity for operators to provide new services and thus to increase their ARPU.

For example Lyse Telecom which is a major FTTH actor in Norway offers naturally a triple-play service comprised of broadband, TV and telephony since 2001 but also proposes adapted services for every subscribers via its fibre network. Lyse has now over 100,000 fibre households active and it should be noticed that it has managed to establish the "world record" of year average subscriber revenues with €1191[26]. Such services indicate a way to a possible viable business model for FTTH implementation.

Further one field is felt as a revenue driver: the Home Networking one. Currently very limited offers can be identified in the field of Home Networking. A few actors have started to launch their own offers such as British Telecom, Superonline or Lyse Telecom which is proposing an IPTV system that enable to control the home automation through the TV screen. But it remains a low developed segment today.

However one technology seems to be able to boost the segment and to create additional revenues, besides the access by FTTH (or else): Powerline, using the energy grid within buildings and homes, enables end users to benefit from Smart Home offers which are truly customised and adaptative. Further PLC as a inbuilding connectivity enables to realise access control, video surveillance, technical building management with significantly lower initial investments. Business model are numerous and can be seen in some large scale commercial deployments such as the one of Electro-com in Russia, in France within the social housing…showing that the combination of FTTB and PLC in building could represent a true opportunity for viable FTTx implementation.

[22] Ectaportal, June 2008

[23] Telegeography, September 2008

[24] Telecom Markets, December 2007

[25] Stratix, March 2008

[26] IPTVNews, April 2008

Previous Market Reviews are available on the website below.

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bmp TELECOMMUNICATIONS CONSULTANTS GmbH
Achillesstrasse 17, D – 40545 Duesseldorf
GERMANY
Tel.: +49 211-577973-0   Fax.: +49 211-577973-11
www.bmp-tc.com
For further information please contact:
Mrs. Nadine Berezak-Lazarus- CEO
Tel.: +49 211-577973-0   Email: **info@bmp-tc.com**

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Selected recent references (complete references upon request)

Operators/ISPs
- British Telecom
- Cegetel/9tel, FR
- Electro-com, RUS
- France Telecom
- GTS CEE
- Smart Telecom, IR
- Artelis, GER

Utilities
- Comp. Ivoirienne Electricité
- EAC, Cyprus
- Iberdrola, ES
- Electricity Authority of Cyprus
- Electricité de France
- ESB Ireland
- Stelkom, Slo

Integrators/venues
- Bechtel, UK
- Cegelec, FR
- Cmgi
- EDEV-CPL
- Sogetrel, FR
- Tank & Rast

Investors
- Baring Vostok Capital Partners
- Bearing Point
- Durlacher
- Idate
- Morgan Stanley

Public authorities
- African Telecom. Union
- Département Meurthe & Moselle
- DCMNR-Irish Government
- Luxembourg City
- Région Alsace
- Veolia Environnement Maroc

Enablers, suppliers
- Hewlett Packard
- Itochu
- Legrand
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