

An overview of Fiber

**European (Muni and other)
Fiber to the Home and
Fiber backbone projects**

*Dirk van der Woude
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Preface

The following overview was compiled with care. However, translation and other errors may have lead to misunderstanding. Corrections and information on unmentioned projects are highly appreciated at dirkvanderwoude@gmail.com.

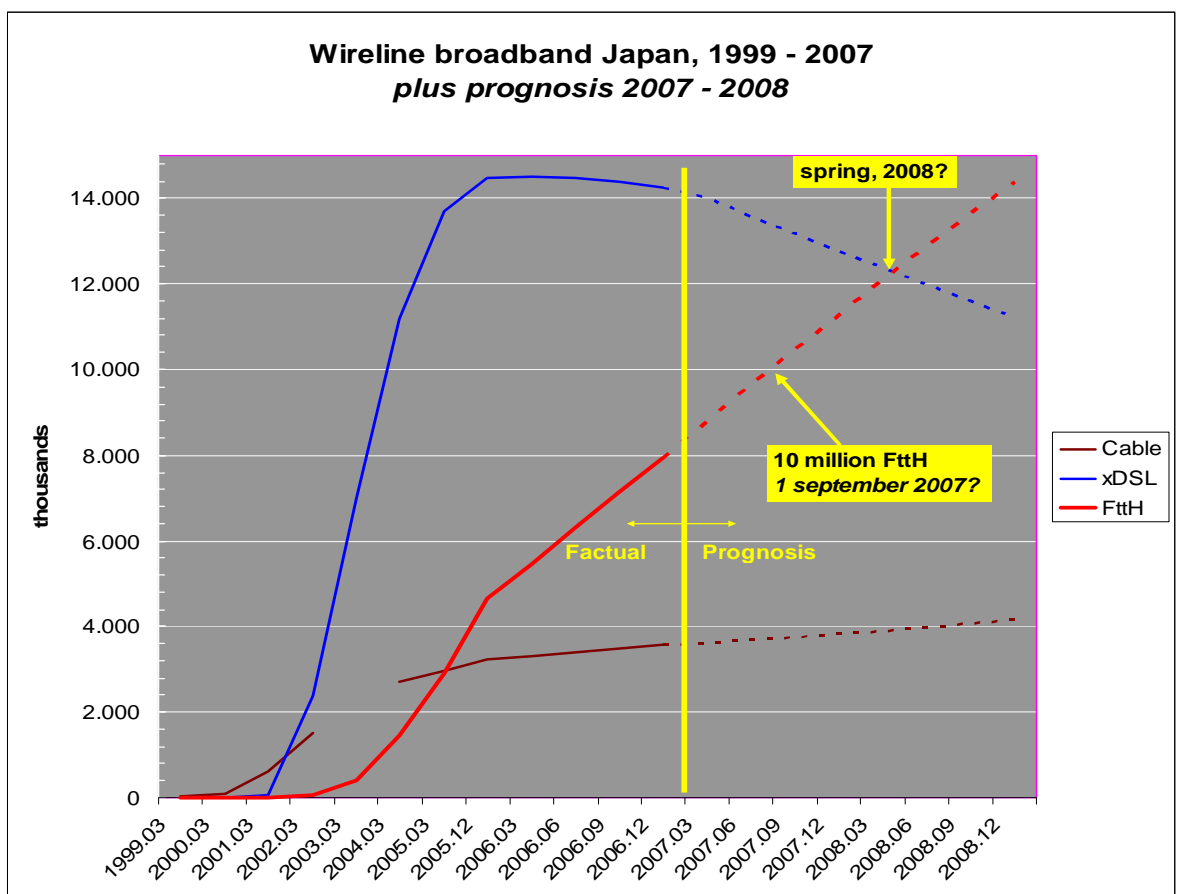
Fiber on the rise

In a press release the OECD in October 2006¹ stated:

“Fibre to the home is becoming increasingly important for broadband access, particularly in countries with high broadband penetration.”

Indeed!

I recently found a direct source to the Japanese FttH stats². They show that in that country in june 2007 there are about 9.5 million FttH subs and at some point next spring fiber will surpass xDSL. Below I have graphed the statistics – and a conservative prognosis.



It's outside the scope of this overview, however I do want to congratulate Lafayette (LA, USA) with its successes: the FttH network will be rolled out³ and with exciting features⁴.

Next to this there are some exiting developments in France, Norway, Switzerland and, lo and behold, the Netherlands. More below the fold.

¹ http://www.oecd.org/document/9/0,2340,en_2649_37441_37529673_1_1_1_37441.00.html

² <http://www.stat.go.jp/data/getujidb/zuhyou/o02.xls>

³ <http://tinyurl.com/29lvsf>

⁴ <http://lafayetteprofiber.com/Blog/2007/06/huval-reveals-plans-martin-luther-king.html>

- **France**

In 2007 France got itself a new President, M Nicolas Sarkozy. Before that time he simultaneously was Minister of the Interior, Chairman of his party – and Chairman of the Department Hauts-de-Seine. In his last quality in 2005 he personally proposed to have all of the inhabitants and businesses connected with FttH, as “copper is not gonna cut it”. To get private enterprise starting the roll out, M Sarkozy as well proposed to set aside a subsidy of up to 70 million euro. See below for more on Hauts-de-Seine.

M Fillon, a good friend of the new President, was named Prime-Minister. In the ‘90s M Fillon was the French telecom minister who started regulation policies, nowadays embodied by ARCEP⁵, one of the most active regulators of Europe. One of M Fillon’s then most important advisers was Mme Gabrielle Gauthey, who later on became a Member of ARCEP’s executive board. Mme Gauthey might well be the one regulator that understands FttH the best, considering her articles⁶ and presentations⁷. From one article (nov. 2006):

We are on the eve of an evolution that is essential, and somewhat revolutionary in the history of telecommunications – the transition from broadband to very high-speed broadband, made possible by the use of fibre in the access network.

Mme Gauthey was quite involved in realizing the French law (Loi 1425⁸ of June 2004) that ensures that local authorities are entitled to deploy communication networks on their territories.

So there you have it: a smart country and a telco sector now under a leadership that understands and promotes real broadband, real competition and real progress.

- In 2006/7 that competition showed in the now raging ‘Fiber battle for Paris’, partly based on the city’s smart decision to lower tariffs for access to its more than man high Hausmannian⁹ sewer network, resulting in:
 - Iliad rolling out 1 million FttH at 1 billion Euro investment. Monthly subscriber tariff: 29,90 euro
 - Neuf Cegetel stating: “In 2009 we want 250,000 FttH (50 Mbits) at euro 29,90”
 - Orange (France Telecom), in 2007 planning FttH (100/10 Mbits at euro 44,90) in Paris as well as in Poitiers, Marseille, Lille, Toulouse & Lyon. Target: 200,000 subs end 2008
 - Noos Numericable (formerly Liberty Global France), stating in March 2007: “Massive investment towards FttH”. However, as some source state at speeds of 100 Mb download and 1 Mb/s upload. Might give some ACK-problems¹⁰?

Before the ‘Paris fiber battle’ the French already had some strong going on’s:

- Sipperec¹¹ is a collective of some 60 communities around Paris. Together they operate an energy corporation; in the 1990’s they decided to roll out a fiber backbone network (100% government owned, map through footnote¹²). The network is exploited and expanded by long term (18 years) concessionary Irisé, a PPP now owning 470 Km of ducts and 1,237 POP’s, covering 84 communities. Irisé rents out fiber to private service providers as well as to institutions like universities. In 2004 Irisé started to be a profitable project, as it is used massively by competitive broadband providers.¹³

Interestingly enough one of the long term private leaseholders happens to be Noos. In May 2004 this company at a price of euro 660 million¹⁴ became¹⁵ a

⁵ <http://www.arcep.fr/index.php?id=1&L=1>

⁶ <http://tinyurl.com/3xd3ch>

⁷ <http://tinyurl.com/2o6dqh>

⁸ <http://muniwireless.com/municipal/825>

⁹ http://en.wikipedia.org/wiki/Baron_Hausmann

¹⁰ <http://tinyurl.com/2udaul>

¹¹ <http://www.sipperec.fr/telecom/presentation.htm>

¹² <http://www.sipperec.fr/telecom/irise.htm>

¹³ <http://www.journaldunet.com/0507/050713irise.shtml>

¹⁴ <http://www.suezenergyna.com/press/documents/SUEZSellsCession.pdf>

¹⁵ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/04/652>

100% subsidiary of Liberty Global International. This company, whose CEO John Malone in the '90- ties was dubbed by Al Gore as the "Darth Vader of the Information Highway"¹⁶, normally does not have a favorable view towards muni fiber projects¹⁷ nor is it known to carry the conviction that FttH is necessary. However, in 2005 UPC/Noos started its own FttH-pilot near Paris¹⁸. Later on in 2006 UPC for euro 1.25 billion sold its French branch Noos to Cinven.¹⁹

- A famous muni FttH-project is that of Pau Broadbandcity²⁰, a project in which 'Professeur Fibre' Jean Michel Billaut²¹ had some apostolian role. In 2006 the project was acquired by competitive telco Neuf Cegetel.
- In the 15th Arrondissement of Paris district CLEC Citefibre started to offer FttH²², in october 2006 the company was acquired by Iliad (see below).
- In 6 suburbs France Telecom is piloting with up to 100/100 FttH²³.
- Earlier on in January '06 President Chirac (right wing) and Paris Mayor Delanoë (socialist) both stated in that they want respectively all of their country and city to get super broadband, i.e. FttH and VDSL²⁴. M Delanoë as well wants small to midband (and financially low threshold wireless in his city. Of course as well on the famous Paris beach²⁵ ;-)
- **Iliad**

This competitive and highly successful telecom group is lead and largely owned by a famous and visionary entrepreneur, M Xavier Niel. He made his first billion(s?) with content offerings of the worlds first really interactive system Minitel.²⁶

Minitel in a way integrated the interactivity into the French culture, as Calient's²⁷ Olivier Jerphagnon²⁸ explained to me in 2006: "It may well be that the French took some time to start using internet. However, interactive we have been for a long time and that may well be part of the explanation why so many French now adapt to blogging etc." I think one should add to that the rich and admirable French tradition of public and political discourse.

In this culture in September 2006 Iliad announced investments up to Euro 1 billion in the roll out of FttH, starting with connecting 2.1 million inhabitants in the city of Paris²⁹. Technically this project is not muni fiber, however the business case of Iliad includes valuable support of the City of Paris, like lowered rights of way costs for use of city sewers etc.

In accordance to European rules these benefits are not given exclusively, they are open to other network roll outs as well³⁰ resulting in three other groups rolling out as well.

Nevertheless, as an open FttH network tends to be a natural monopoly of course the first to roll it out gets a boost from this kind of (perfectly legal) municipal support. Of course, Paris being a large city, it could well be big enough for several FttH providers, each to different districts. Map through footnote³¹ (and when you're at it, see map of France as well³²). Historically Paris is noted as the City of Light. It seems they do not want to be eclipsed by FttH-frontrunners like Tokyo or HongKong.

¹⁶ <http://www.videomaker.com/scripts/article.cfm?id=7843>

¹⁷ http://www.lightreading.com/document.asp?doc_id=98529

¹⁸ <http://www.vnunet.fr/fr/vnunet/news/2005/10/19/exclusif-noos-upc-teste-100-mbits-fibre-optique-domicile>

¹⁹ <http://www.journaldunet.com/0603/060327-rachatupc-noos.shtm>

²⁰ <http://eco.agglo-pau.fr/Initiatives/PBC/pcb.asp>

²¹ <http://billaut.typepad.com/>

²² <http://www.citefibre.fr/citefibre.htm>

²³ http://www.francetelecom.com/fr/espaces/journalistes/communiqués/CP_old/cp060725.html

²⁴ <http://muniwireless.com/municipal/825>

²⁵ <http://www.parisdailyphoto.com/2006/07/paris-plage-2006.html>

²⁶ <http://en.wikipedia.org/wiki/Minitel>

²⁷ <http://www.calient.net/>

²⁸ http://www.calient.net/corporate/management_team.php

²⁹ http://www.iliad.fr/presse/2006/CP_12092006.pdf

³⁰ http://212.27.33.10/presse/2006/CP_11092006_cp1.pdf

³¹ http://www.tactis.fr/IMG/gif/FTTx_PARIS_vTACTIS_Bati_lit.gif

³² <http://tinyurl.com/2o7wva>

An important partner in Iliad's Paris project, in which some 2 million km of fiber will be used is the Amsterdam based company Draka Comteq.³³ On 20 October 2006 Iliad announced³⁴ the acquisition of CiteFibre, a company already rolling out FttH in one of the Parisian districts.

"This move will confirm Iliad's front-ranking position in the development of optical fibre services in France of the type described in its announcement dated 11 September 2006.

Citefibre was established in November 2004 and has more than 500 clients, 3,000 kilometres of optical fibres and 130 buildings with optical fibre cabling (representing some 4,000 households which can be connected to the network) in the 15th arrondissement of Paris. Citefibre also currently holds authorisations allowing it to connect another 4,000 households.

Citefibre has 25 employees, whose skills and experience will underpin those of the Iliad Group's own teams, particularly with respect to vertical cabling in buildings. Between them, Iliad and Citefibre have all the necessary expertise required for carrying out an optical fibre project of the sort announced by Iliad last September." (source see footnote 11)

- Then there is the department of **Hauts de Seine**. In 2005 Hauts de Seine's General Council, acting on a proposal of its then chairman M Sarkozy, decided to have all homes and all 100,000 companies connected to FttH³⁵, at '*speeds of several 100's to a 1,000 megabits per second*'. The department, the western side of greater Paris, has the highest income per capita of France. The project is to be a two phased private-public, the department has set aside already a subsidy for the first phase of Euro 25 million, in later phases in total 70 million. There is even an online videocast, made by aforementioned M Billaut, of the meeting in which the Council decided upon FttH³⁶. Talking about a country understanding interactivity...
- Next there are many, many muni- and departmental empowered local fiber projects in France, a list is attached to this text.
- A very special project that should not be omitted is the one in Saint-Nom-la-Bretèche, just a few miles west of Versailles. What one man can do... In his own words³⁷:

I'm a telecommunications economist in Paris and I spend a lot of time thinking about and using broadband. We've chosen to live in a beautiful area of southwest Paris but one which has limited broadband options. In fact, broadband is terrible for everyone in our village. The incumbent operator (France Telecom) hasn't upgraded our own exchange for DSL and that means that people in the village are connected through one of two towns, each roughly 5 km away.

I subscribe to broadband via DSL and cable. At 4.5 km from the DSL exchange I receive 1 Mbit/s via the competitive operator Free - too slow for me to take advantage of their IPTV offer for example. I also subscribe to Noos for cable Internet. I pay for a 30 Mbit/s connection but receive only 3 Mbit/s - and even that is traffic shaped. Even 200 euros of calls to the helpline at 34 cents a minute hasn't solved the problem. I am not alone. It seems that almost everyone I speak with here has similar problems and people are getting fed up.

There is talk around town that France Telecom has offered to upgrade the exchange if the town will pay the costs (roughly EUR 50K). I say no. We're going to build this network ourselves. We are going to bring our own broadband to our homes.

³³ http://212.27.33.10/presse/2006/CP_12092006.pdf

³⁴ http://www.iliad.fr/en/presse/2006/CP_201006_Eng.pdf

³⁵ <http://www.hauts-de-seine.net/portal/site/hds/menuitem.79b018ec45ba2c367b61fea37813e1ca/?vgnextoid=39620528b50ef00VgnVCM10000087311eacR>

[CRD&Id=1863](http://www.hauts-de-seine.net/portal/site/hds/menuitem.79b018ec45ba2c367b61fea37813e1ca/?vgnextoid=39620528b50ef00VgnVCM10000087311eacR)

³⁶ http://billaut.tyepad.com/jm/2006/03/le_92_dlibre.html

³⁷ <http://byobroadband.blogspot.com/>

Our goal is simple. We want a fiber to the home network capable of gigabit speeds which will be open to services from any operator. I've spent enough time writing about "open access" networks and infras.

- **Norway**

- In may 2007 a press release came along...

Norwegian power company taps PacketFront for FTTH

MAY 25, 2007 PacketFront (search for PacketFront), provider of open-access fiber-to-the-home (search for FTTH) broadband networking, has signed a contract with Norway's largest power utility company, Hafslund, to build an open access FTTH network in Ostlandet, the area in and around Oslo.³⁸

When I first read it I didn't realize its significance nor that this is a massive Open Muni FttH roll out. However, since then I've found

- 1) demographic info on the area, as well as
- 2) an answer to the question who owns this Hafslund energy corp.

Resulting in these answers:

- 1) In population terms the region of Ostlandet contains about 50% of all of 4.6 million inhabitants of Norway. And apparently those > 2 million people all will get open FttH
- 2) Hafslund is an energy corp listed on the Oslo stock exchange and 53.72% of the shares is owned by one big, big shareholder: none other than the Municipality of Oslo.³⁹

So here a muni FttH project is rolling out to half of a country's population...

- In the rest of Norway small projects are kicking off, at a stiff consumer price though. At least one Norwegian would love muni fiber⁴⁰.
- Then there is Stavanger (pop. 110,000) where the local energy corp, Lyse, rolls out FttH. Or the customer himself, as PointTopic explained in april 2007:
"When households in the city of Stavanger in Southwest Norway want to get broadband from Lyse Tele, they have two options: either to wait until the engineers dig a trench for them or do it themselves. An amazing 80% chose to get out their shovels and dig their own. Lyse Tele's broadband services, like many of its kind in Scandinavia and the Netherlands, are special. They are fast, symmetrical and cheap. Monthly prices for stand-alone service range from as little as US\$26.50 to US\$31.00 for a symmetric 10 Mbit/s FTTH broadband service. They are delivered over optical fibre, and no longer use copper wires."⁴¹

- **Germany:** energy giants RheinEnergie and RWE are taking off on FttH. They already have local ISP's – and they strive to be free of incumbent Deutsche Telekom's tariffs. DT on its part wants to deploy a country-wide fiber/VDSL network, but demands a regulatory holiday on it. To which chancellor Merkel already has agreed, however Brussels does not agree. In june 2006 Commissioner Reding decided to take the government of Chancelloress Merkel to court:

BRUSSELS, Belgium: EU regulators took legal action against Germany on Wednesday for Berlin's refusal to change a law shielding Deutsche Telekom AG's high-speed Internet network from rivals.

The European Court of Justice will now have to decide if Germany can keep a law giving Deutsche Telekom a de facto monopoly on a glass-fiber DSL internet network it built to allow it recoup the cost without of setting up an infrastructure with sharing it with others.

The EU executive's arm said this departure from normal regulation breaks Europe-wide telecom rules giving new providers the right to use telephone and Internet networks.

³⁸ <http://tinyurl.com/3dcjv4>

³⁹ http://www.hafslund.no/files/File/engelsk/aksjonerer/aksjonerer_eng_may_07.pdf

⁴⁰ <http://anglero.blogspot.com/2006/02/ftth-in-norway-is-joke-so-far.html>

⁴¹ <http://point-topic.com/content/dslanalysis/BBAftth070219.htm>

"The Commission has repeatedly warned Germany that its new telecoms law violates EU telecom rules but without success," said EU Telecom Commissioner Viviane Reding. "We want to ensure Germany can benefit from a healthy, competitive and fully functioning market."
Despite last-ditch negotiations, the EU said the German government was unwilling to change the law the way the EU wanted and continued to defend its position.⁴²

Recently some German muni and other FttH projects became public.

- **Köln (Cologne)**

In the German city of Köln (Cologne) a FttH network is rolled out parallel to a VDSL network by the incumbent DTAG.

The FttH network is deployed by NetCologne AG, a 100% municipal corporation. (NetCologne is a 100% subsidiary of GEW AG⁴³, which is a 100% subsidiary of Stadtwerke Köln⁴⁴, which is a 100% subsidiary of the Köln Municipality⁴⁵).

Update June 2007: the roll out seems to go well, NetCologne opened a special site for the project, for which now the name 'CitynetCologne'⁴⁶ has been selected. From the Amsterdam perspective an interesting choice ;-)

The corporation is already DSL and telephony market leader in the greater Köln-Bonn-Aachen area. On 3 July 2006 NetCologne started the roll out of its Fibre-to-theHome network, as described in its press release:

"Das Besondere an diesem Datennetz: NetCologne baut das Glasfasernetz direkt bis in die einzelnen Gebäude, so dass die letzte Meile - die sogenannte Teilnehmeranschlussleitung (TAL) - nicht mehr von der Telekom angemietet werden muss. NetCologne stärkt so seine Wettbewerbsposition; Kunden können von einer echten Alternative zu bestehenden Angeboten profitieren.

Mit CityNetCologne bauen wir eines der schnellsten Datennetze Europas", so Werner Hanf, Geschäftsführer von NetCologne. "Köln ist damit vielen Metropolen ein Stück voraus. Unsere Kunden werden von den neuesten Multimedia-Anwendungen profitieren können." Den ersten Spaten setzt heute Oberbürgermeister Fritz Schramma, der die Investition von NetCologne begrüßt: "Der Ausbau des neuen Datennetzes stärkt den Medienstandort Köln und schafft da-zu weitere Arbeitsplätze. Der Ausbau des Glasfasernetzes beginnt in der Kölner Innenstadt und wird dann Schritt für Schritt in weiteren Gebieten von Köln fortgesetzt. NetCologne möchte etwa 115.000 Mehrfamilienhäuser und Gewerbegebäude von insgesamt 203.000 Gebäuden in Köln an das neue Netz anschließen. Das Unternehmen investiert in den drei nächsten Jahren etwa 250 Millionen Euro in den Bau des neuen Glasfasernetzes. Die Investition amortisiert sich durch den Wegfall der Teilnehmeranschluss-Gebühren, die NetCologne für jeden Kunden, der an das eigene Netz angeschlossen wird, nicht mehr zu entrichten braucht."⁴⁷

- Next, the city of **Schwerte** project comes under the auspices of (Stadtwerke Schwerte, or Cityworks Schwerte) Ruhrpower, which is 47% owned by the municipality of Schwerte, 23.5% by the City of Dortmund, and 23.5% by RWE again. (The other 6% is owned by a joint venture vehicle owned by the three partners.) Ruhrpower's ISP/telco is Ruhmnet, majority owned by Ruhrpower, with a local collective bank and Versatel as minority partners.⁴⁸

As these utilities are completely, or for a large part, municipal owned, these projects fall into the category of muni fiber.

⁴² <http://tinyurl.com/2sbsbq>

⁴³ http://www.netcologne.de/unternehmen/nc_unt_unterseite_323.php

⁴⁴ http://www.stadtwerkekoeln.de/swk/download/pdf/Beteiligungsuebersicht_qb_05_2006.pdf

⁴⁵ http://www.stadtwerkekoeln.de/swk/download/pdf/Beteiligungsuebersicht_qb_05_2006.pdf

⁴⁶ <http://www.citynetcologne.de/>

⁴⁷ http://www.netcologne.de/presse/nc_presse_meldung_13244.php

⁴⁸ <http://eurotelcoblog.blogspot.com/2006/02/whos-that-behind-you-couple-of-days.html>

- Until fall 2006 it seemed (to me at least) that there were only few FttH projects in Germany. Then the famous Fraunhofer Institute, together with the Dresden University, published to the Federal Ministry for Economic Affairs and Technology the report "Technologische und ökonomische Langfristsperspektiven der Telekommunikation"⁴⁹

It mentions next to Köln FttH projects in Norderstedt, Hamburg, Gelsenkirchen, Dessau, Magdeburg). The authors expect these projects to be successful and ousting other technologies.

Obwohl die technische Reichweite von Glasfaser-Anbindungen im Jahr 2010 auf die Gesamtzahl der Haushalte in Deutschland gerechnet noch gering ist, hat sich diese Zugangstechnik in einigen Städten sehr schnell durchsetzen können und dadurch die anderen Zugangstechnologien rasch verdrängt. Insbesondere in Städten oder Ballungsgebieten mit innovativen Stadtnetzbetreibern (City Carriern) hat sich die Glasfaser-Alternative entwickelt. Angefangen hatte dies in den Jahren 2005 und 2006 mit den Stadtnetzbetreibern NetCologne (Köln) und Wilhelm.tel (Norderstedt und Teilen von Hamburg) sowie einer Reihe weiterer regionaler Netzbetreiber (z. B. in Gelsenkirchen, Dessau und Magdeburg), die die Chance ergriffen hatten, ihre Netze komplett auf Glasfaser umzurüsten, als die Preise für Komponenten und Endgeräte rapide fielen. Sie wurden damit in Deutschland zu Vorreitern einer Entwicklung, die weltweit zu beobachten war und die über das Jahr 2010 hinausreichen wird. Erfolgsfaktoren für die Stadtnetzbetreiber sind dabei: Langfristige Unternehmensstrategien, Erfahrungen mit dem Betrieb eigener Infrastrukturen, Kenntnis der lokalen Märkte und der relativ späte Einstieg in die Welt der bereits liberalisierten Telekommunikation. Diese Faktoren erlauben es den City Carriern, ein Geschäftsmodell zu realisieren, bei dem zwar die aufwändige Neuverlegung von Glasfaserleitungen finanziert werden muss, das aber dennoch langfristig profitabel ist.

- **Austria:** The city of Vienna (pop. 1.5 million) has decided that all of it will be FttH-ized through their 100% owned utility giant Stadtwerke Wien⁵⁰. However, this project seems to take some time to materialize, as references to the actual progress are difficult to find.

- **Spain**

Thanks to *Norman Albi* of Aggaros (very well chosen name!⁵¹) for providing me with local up to date info.

- **Asturias:** a 30.000 homes FTTH Open network. The network will be finished in February 2007 and fully operational in March. The investment is fully public and reaches 18 million euros⁵².
- **Catalonia:** the project today is a fiber transport open network that will reach a large number of cities in the telecommunications market⁵³. Comment: this part of LocalRet seems to have some resemblance to departmental fiber projects in France, where fiber is roll out to local central offices, from where xDSL is provided by telco's.
- **Barcelona:** at the FttH Council Conference in February 2007 LocalRet CEO Lopez presented worked out plans to deploy FttH in a central part of the city. Scale would be some 10 thousands of connected addresses.
- **Denmark:** 140 of the 180 odd energy companies are embarking on a deployment of some 967,000 homes. That's 33% of all homes in which 50% of all Danes. The local Market authority applauds this move⁵⁴.
This is not muni fiber – however many of these energy corporations are owned by their

⁴⁹ <http://tinyurl.com/vp9lpp>

⁵⁰ <http://www.heise.de/english/newsticker/news/68912>

⁵¹ <http://www.aggaros.com/angles/idioma.html>

⁵² http://www.alcatel.com/vpr/?body=http://www.home.alcatel.com/vpr/vpr.nsf/DateKey/05092005_2uk

⁵³ http://www.lightreading.com/document.asp?doc_id=76145&WT.svl=news1_6

⁵⁴ <http://www.citynet.nl/upload/Danish%20Comp%20Auth%20on%20FTTH%20by%20electricity%20companies%20summary.doc>

subscribers, as Denmark is a country of collective efforts. Foreign owned incumbent TDC in reaction is working on a country wide fiber/vdsl scenario.

- **Sweden:**

In Sweden about half a million homes have a FttH connection. In June 2007 the telecom regulator PTS moved to a structural separation of incumbent Telia, this to ensure that the network is real open to competitors. Verbal information from Sweden indicates that PTS would want the same openness for local fiber networks:

Telia 'should be broken up'⁵⁵

Published: 14th June 2007

Swedish-Finnish telecom operator Telia Sonera could be forced to separate, putting its Swedish fixed-line network in a separate unit, if a new proposal is incorporated into law. The proposal was put forward in a document from regulator PTS drawn up on a commission from the government.

Under the proposal Telia Sonera would be forced to split up the production and sale of certain wholesale services from its other activities. The two parts of the company would have to be separated by 'watertight barriers', PTS said.

The model put forward for Telia Sonera is very similar to the British model, in which former monopoly phone provider BT has a semi-detached unit to handle wholesale activities.

Marianne Treschow, head of PTS, criticized the current system whereby Telia Sonera negotiates with other operators to give them access to the network. She said that the system had led to repeated conflict between the companies, with a long line of court cases resulting.

"And still the relationship between Telia Sonera and the other operators is not working," she said. "And when the buyer-seller relationship is now working, it damages Sweden as an IT nation, and leads to us falling behind our neighbours."

The proposal will now be handed to the government, and will be put out for consultation during the summer. PTS expects the measures to be passed by January 1st 2008, but for them to take some time to be fully implemented.

Specific projects:

- of the in total Swedish 289 communities 200 own a fiber network. Partly backbone, but in a growing number of them FttH is offered. Where available about 50% of the population subscribes, the actual number of FttH connections is some 500,000.
- StokAB, the 100% municipal owned fiber corp. of **Stockholm**, is adapting. They used to offer only dark fiber, but in 2005 Stockholm's City Council decided to have the city's 100,000 odd social housing apartments connected in a FttH roll out. It is expected that this example will be followed all through Sweden⁵⁶. In 2006 the ruling coalition lost it's majority in city and country. This may lead to policy changes.

- **Slovenia:** in May 2007 incumbent Telekom Slovenije published it's report on 2006. On page 20 is stated:

"Telekom Slovenije, d.d. launched this year's most important project »F2«, which will mark the coming decade. The company decided to undertake massive construction of FTTH (Fibre to the Home) fibre optic local access networks. This constitutes a significant developmental and technological shift from copper to fibre optic networks, offering greater reliability, quality and faster transfer rates as well as the possibility of additional services."

Followed on page 23 by:

⁵⁵ <http://www.thelocal.se/7601/20070614/>

⁵⁶ www.ssnf.org and http://82.182.148.110/ppp/www/se_eng.asp

"In 2007 Telekom Slovenije, d. d. began implementing a project that is to mark the coming decade. The company decided to go ahead with massive construction of FTTH (Fibre to the Home) fibre optic local access networks. Telekom Slovenije, d.d. plans to install up to 50,000 fibre optic lines in 2007. High performance fibre optic networks will be built for the future, when emphasis will be placed on completely different multimedia services and content."⁵⁷

- Lithuania:** in may 2007 incumbent TEO announced to start rolling out FttH: TEO LT, AB (hereinafter – TEO), an integrated telecommunication, IT and TV services provider, commences the installation of the first in Lithuania new-generation fiber-optic network, the fibers of which will be installed up to the user's computer.

"The Fiber-to-the-Home (FTTH) Project is one of the most important network modernisation projects of TEO. Over three years, we will invest more than LTL 100 million in the new optical access network. This strategic solution will enable us to meet the fast-growing customer needs for fast Internet access not only today, but also for many years to come", - says Arūnas Šikšta, General Manager of TEO LT, AB.

(...)

TEO plans that the residents of the 5 biggest cities of Lithuania will be the first to use the advantages provided by the fiber-optic network, and in Vilnius the provision of fiber-optic Internet services will be launched already in June.⁵⁸
- United Kingdom**

A little known, at least until recently to me (*so hat tip to Keith McMahon*), FttH aiming project is that in Yorkshire⁵⁹. It seems that this is for certain a muni empowered broadband project involving a stunning 500,000 households. However it is yet uncertain whether it will be FttH to all of those households or as I hear maybe FttH to half that number and fiber-VDSL to the other less affluent half of the territory.

From the site⁶⁰ it becomes clear that the project will be going into the roll out phase somewhere in mid 2007. As I am still researching this, for now I 'll sail on James Enck's trusted compass⁶¹:

"The Digital Region South Yorkshire project will be bigger than Amsterdam, covering 1.5m population and 500k households, and from what I'm able to gather, there are some other regional projects in stealth mode which are looking to this as an indicator of how to proceed. It will also be intriguing to see how the BAFO (best and final offer) stage, which would appear to be happening now, (at least according to the timeline outlined in the site) comes out, in light of the short list of candidates.

The other day a valued friend and mega-uber value reader said I should shout more loudly about past predictions I have made which have come to fruition. I won't bore you with a list now, but one of which I'm proud is that in January 2004 I wrote a long note in which I highlighted UTOPIA, Stokab, and a handful of citizen-driven projects as indicators of a coming wave of tension between the agenda of telco/cable broadband service providers, and the social/economic development agendas of local and regional governments, in their pursuit of broadband self-determination. Well, it's happening all around us now, and finally in the UK, so hold on to your flat caps.

UPDATE: A mega-uber value reader writes in to say that this project may not be strictly comparable to Amsterdam, as Amsterdam is explicitly a FTTH project, whereas specific technologies are not mentioned in the Digital Region brief. Additionally, he argues, the lower housing density in South Yorkshire would make FTTH a more expensive option, so they're probably starting with FTTC and VDSL, possibly eventually migrating to FTTH. I would suspect the same, and I should have made this clear in the post. However, as an example of a muni

⁵⁷ <http://www.telekom.si/uploads/pdf/Podjetje/Summary%20of%20Annual%20Report%202006.pdf>

⁵⁸ http://www.teo.lt/en/press_releases-1308-1409.html

⁵⁹ <http://www.digitalregion.co.uk/index.html>

⁶⁰ http://www.digitalregion.co.uk/how_far.html

⁶¹ <http://eurotelcoblog.blogspot.com/2006/09/hear-all-see-all-say-nought.html>

(actually multi-muni, quad-muni?) broadband initiative, it would still be bigger than Amsterdam, if not faster.

However, the latest progress report on the project's site dates from late 2006. Somebody out there who knows more? *Update 27 June 2007*: the Tender appears to be won by a consortium of Kingston⁶²/Alcatel/Thales, resulting in FTTC/VDSL, at least at first. Contenders losing out appear to be BT and Sky/Easynet.

- **Finland** has some small projects⁶³.
 - **Kouvola** region a project to bring Fiber to the Village and from there ADSL (presentation⁶⁴)
 - Network Co-operative **Kuuskaista** consists of 6 municipalities: Kuortane, Alavus, Töysä, Ähtäri, Lehtimäki, Soini about 10,000 homes and 2,000 businesses⁶⁵

- **Italy / Milan, now country wide**

The famous competitive telco FastWeb only 10 years ago started as a muni fiber project. Recent case studies by the European Foundation for the Improvement of Living and Working Conditions⁶⁶ and the ITU⁶⁷ describe how municipal entrepreneurship lead to the roll out of a FttH/FttB network in the city of Milan as well as to the start of the successful national competitive telco Fastweb.

In July 1999 FastWeb SpA was launched in conjunction with its sister Metroweb SpA, as a result of a joint venture between the then 100% municipally owned local utility AEM SpA together with the private e.Biscom company. MetroWeb was for 66% AEM owned, Fastweb for 55% e.Biscom and 37% AEM 37%). MetroWeb rolled out a fibre network in Milan, FastWeb was given exclusive access⁶⁸ to the network in order to deliver services. Several years after shares were swapped.

Today 100% of Metroweb's shares (and so ownership of the rolled out Milan FttH/B network) is held by AEM SpA, of which the Milan Municipality now holds a controlling ca. 44% of shares, another 49% has been floated.

AEM's shares of Fastweb were acquired by e.Biscom, which changed its brand name to Fastweb. Having learned from the, to a large extent municipal financed, network roll out in Milan the company started to roll out comparable networks in other Italian cities.

With quite some success, as described by aforementioned European Foundation:

“The Italian company FastWeb, founded in 1999, stands as, possibly, one of the most significant players in the telecommunications sector today. It forms part of the latest generation of operators, born out of the opportunity provided by liberalization processes in Europe.

FastWeb provides ‘triple play’ services – TV, telephony and Internet access – to the Italian residential and business markets by means of its own fibre cable TV network that includes the backbone and the majority of local connections to users and businesses. FastWeb has complemented its fibre optic network with ADSL access.

The company is continuing to expand its network: by the end of 2010, FastWeb hopes to cover half of all Italian homes and connect all cities in the country of more than 45,000 inhabitants.

Growth in revenues and in number of users has been constant since the company began operations. From this year, the company projects that it will generate a positive cash flow and pay dividends to its shareholders.

Innovation is also a constant in FastWeb activities. The company has maintained a regular flow of new products and services by making use of its well-established technological competencies, and by creating imaginatively packaged

⁶² http://en.wikipedia.org/wiki/Kingston_Communications

⁶³ www.corning.com/docs/opticalfiber/cm6325.pdf

⁶⁴ http://www.europefithcouncil.com/extra/Restricted_area/Regulatory_Com_restricted/Kouvola_Region_Hannu_Kuverola_.pdf

⁶⁵ <http://www.corning.com/docs/opticalfiber/cm6325.pdf>

⁶⁶ <http://www.emcc.eurofound.eu.int/publications/2005/ef0567enC5.pdf#search=%22fastweb%20milano%22>

⁶⁷ www.itu.int/osg/spu/ni/broadband/workshop/italyfinal.doc

⁶⁸ *ibid*, http://newsroom.cisco.com/dlls/prod_040902c.html

offerings to its markets. It has also created and developed specific ICT based management systems and applications, as new services require new ways of controlling use of the network and new billing methods. Proof of its success in innovation can be seen in its 'TV on demand' service – the first of its kind in the world – and other breakthroughs such as virtual video recorders or access to voice mail systems from any triple play device.”⁶⁹

In march 2007 Swisscom stated its interest to buy Fastweb, apparently because of its know how on IP TV. According to Lightreading⁷⁰:

In the field of new technologies, which are key to the further development of Swisscom's infrastructure, Fastweb has a lead of three to five years.

Fastweb also has a competitive edge in terms of expertise in the strategically important field of multimedia applications based on broadband, and has been delivering IPTV to its customers since 2001.

In may 2007 the European Commission agreed to the deal.⁷¹

- **Netherlands:**

In the Netherlands the fiber debate seems to have lost some steam, as the new (and privately financed) Reggefiber company has published its intentions to roll out some 1.5 millions FttH connections in the country. Some more information on that from Hendrik Rood through Gordon Cook's blog & research⁷².

New and existing projects:

- Regge Fiber in 2007 announced that all of the city of **Deventer** (pop. 110,000) will be rolled out⁷³.
- Incumbent KPN in may 2007 announced that they will roll out FttH to all addresses in **Enschede** (pop. 140,000)⁷⁴.
- **Rotterdam** has already some 4,000 live connections, the City decided (early 2006) to have a city wide backbone rolled out, aiming at FttH-ing all of the city. The Hague has allready FttH-ized all 400 schools, as did Deventer with its 52 schools. Not to be outdone the province of Zeeland (geographically a collection of peninsulas) has partly financed fiber rings to all its secondary eduction institutes.
- **Almere** (pop 250,000) has a pilot project, that aims at all of the city. There is some movement to might lead to a citywide roll out.
- **Nuenen** (pop. 30,000) 90% of all homes are paying subs (at least one sub either/or TV, internet, telephone) to the local FttH-net (10 or 100 Mb symmetric.), Eindhoven has some 8,000. The council there recently decided to have all of the city connected.
- In the nearby **Geldrop-Mierlo** competitive telco Regge Fiber announced the intention roll out of FttH. That alone was enough for about 65% of the population to sign a contract. Roll out starts in 2007.
- In **Hillegom** (pop 30,000) CLEC Lybrandt is deploying FttH with their KaDaKa ("kastje dat alles kan", box that can do all) project⁷⁵. Lijbrandt has communicated their ambition to deploy in the town of **Lisse** as well as the city of **Haarlem** (provincial capital, pop. 145,000).

Below from James Enck's blog⁷⁶ on august 9, 2006:

Over in the Netherlands Vincent Dekker at Trouw has been continuing to dig into the FTTH story. As usual, he has come up with some very interesting information.

Firstly, a commercial (as opposed to muni) FTTH project in the small town of Hillegom, halfway between Amsterdam and The Hague, has reported some

⁶⁹ <http://www.emcc.eurofound.eu.int/publications/2005/ef0567enC5.pdf#search=%22fastweb%20milano%22>

⁷⁰ http://www.lightreading.com/document.asp?doc_id=119165

⁷¹ <http://www.iht.com/articles/ap/2007/05/10/business/EU-FIN-Switzerland-Swisscom-Fastweb.php>

⁷² <http://gordoncook.net/wp/?p=83>

⁷³ <http://tinyurl.com/2pk4da>

⁷⁴ http://www.enschede.tctubantia.nl/139660/hoge_verwachtingen_glasvezel

⁷⁵ <http://www.kadaka.nl/info/planning.html>

⁷⁶ <http://eurotelcoblog.blogspot.com/2006/08/haarlem-shuffle.html>

pretty astonishing progress in its rollout. Of the 7,431 homes in the town, 5,400 are passed by the network, and of that number, 4,600 homes are connected and taking at least one service - a penetration rate of 85%. Of this base, 90% take telephony and/or TV. In other words, within its footprint, the Hillegom fiber network has a 73% share of the markets which have traditionally belonged to cable (Casema) and KPN, leaving these two companies to fight for the remaining 27%. What's more, the total cost of construction and lighting the network has worked out to EUR1200 per home, which should give one pause for thought when we consider that the enterprise value (EV) per sub in the recent Casema transaction was north of EUR1700.

So encouraged is the company behind the project, Lijbrandt Telecom, that it now plans to expand to the nearby town of Lisse (10,000 homes) in October, and to 120,000 homes within the Dutch Bollenstreek heartland within three years. Perhaps most interesting is the revelation that the company behind the Hillegom network, Lijbrant, is owned by entrepreneur Dik Wessels, who also owns construction conglomerate VolkerWessels, which is already involved in a number of muni fiber projects, and whose Reggeborgh company recently acquired a very high quality national backbone. It looks to me as though Mr. Wessels is gradually amassing assets which could pose a real challenge to both KPN and cable.

Next, Trouw trains its sites on Haarlem (yes, American readers, this is the original), a city of 145,000 bordering the Bollenstreek region, where it transpires that apparently KPN wants to do FTTH and share the cost of digging with Lijbrandt, the very same company behind the Hillegom project. Lijbrandt reportedly isn't hot on the idea, principally because the city charges EUR22 per meter for restoring the streets to their original state. The article goes on to report that KPN is in negotiations with Lijbrandt about offering services on the Hillegom network, which presumably means IP TV.

All this points to a new way of working for the incumbent: partnering with those who have the expertise in infrastructure projects to share costs in new build (even if doing so enables another strong competitor in the process, it's better than missing the boat completely), and being a wholesale customer on networks where it has already been trumped (as in Hillegom). It also points to a future market with much wider regional/local variations in terms of level of dominance and market share, and presumably, once again, a new set of challenges for regulators. Does 13% market share (my estimate) in a town like Hillegom really equate to significant market power? Should the incumbent which finds itself in such a situation be held to the same price controls in this particular town, or should regulation be restructured to suit a more varied regional or local situation?

- Housing corporation Portaal has started to connect it's 50,000 odd homes to FttH⁷⁷ in **Soest, Utrecht, Arnhem** and **Nijmegen**.
- **Amsterdam** now are at the European Commission to have its private public FttH network (40,000 subs) confirmed on conformity to state aid rules. Amsterdam in 2004 voluntarily entered discussions on their project with the European Commission, ending in the just as voluntary presentation of the whole project to Brussels in May 2006. The Commission has been asked to formally investigate that the project does not involve state aid, as the Amsterdam as a minority share holder invests in only the passive layer. The other owners of the fiber company Glasvezelnet Amsterdam (GNA) are ING Real Estate, Reggefiber and five housing corporations. The latter own some 70% of the Amsterdam's rental housing – and 80% of all homes in Amsterdam are rented ones. The Amsterdam approach is based on the European concept of an authority operating under the Market Economy Investor Principle (MEIP). The responsible Directorate General extensively described this principle and its

⁷⁷ http://www.lightreading.com/document.asp?doc_id=87410

application in broadband projects in April 2005 (see page of the link, on page 10 an imaginary Amsterdam like case is described, see foot note.⁷⁸ The final opinion of Brussels is expected this fall.

In June 2006 cable company UPC sued the city, demanding a standstill of the project until the European Commission has issued its opinion. However, testing the project on the European rules, the Amsterdam judge ruled that the project in no way involved state aid, so all of UPC's demands were denied.

On October 12, 2006, GNA started the roll out of the network.⁷⁹

In December 2006 Brussels issued an interim decision, in which the Commission accepted the basic principles of GNA and the fact that the company itself and its share construction do not constitute state aid. The Commission however wants more information on proceedings before the incorporation of GNA, which causes them to do some more research. There is no indication yet on the time scale of this inquiry nor of a date for a final decision.

- **Amsterdam:** in February the schools in the city together tendered broadband connections. The tender was won by KPN (passive) and Imtech (active). The result is that some 600 locations now can be connected with each 1,000 Mb/s.
- **Switzerland: Zürich**

After a positive vote in the Zurich City Council, Swiss law obliged a popular referendum on an investment of 200 million Swiss francs by the municipal energy corp EWZ. On March 12, 2007, the city's population could decide. There were actions groups in favor as well as against. Rumor has it that the latter partly were supported by vested interests – see the famous FUD page of Lafayette ProFiber⁸⁰. However, the population clearly wanted FttH, as 65% of all voters entered 'Yes'⁸¹. The citywide roll out now has started.

On May 29, 2007, Orange (France Telecom) announced a small scale pilot in which it will use the new network in Zürich as a service provider.

Below a comment of James Enck on Zürich, back in those golden times when Eurotelcoblog was still up:

“This astute observation from the immortal Alan Partridge has stood the test of time, and also allows me to work an oblique and pathetic Swiss Cheese reference into this post. A Platinum Club charter member and long-time mega-uber value reader alerts me to something which I missed a couple of weeks back, and haven't seen coverage of anywhere else. The Zurich municipal electrical utility company (EWZ) has a diversification strategy into telecom, and the city council has applied to

⁷⁸ COMPETITION POLICY NEWSLETTER 2005 NUMBER 1 SPRING: “**Investment on market terms** When public authorities intervene on the market on the same terms as private investors, there is no granting of State aid. This case, however, is quite rare, since public authorities generally take action precisely because the market fails to deliver the desired supply.

Nevertheless, it might still be the case that a public investment project in a broadband project is capable of securing revenues that are sufficient to repay its costs within a reasonable time-horizon and provide a rate of return in line with the market remuneration for projects of similar risk. For pure infrastructure projects the appropriate repayment period might be longer, and the return on investment might be lower than those required by the market on integrated telecom projects. The Commission accepts the principle that the business model of a 'utility' company involved in pure infrastructure provision would be different from that of a telecom operator investing in a network and providing electronic communications services to end-users (1). However, conformity with the Market Economy Investor Principle (MEIP) would have to be supported by a sound business plan, foresee a pricing policy that is justified on commercial rather than on policy grounds and possibly envisage a relevant participation of private partners to the venture on equal terms with public investors. “

⁷⁹ http://ec.europa.eu/comm/competition/publications/cpn/cpn2005_1.pdf

⁸⁰ www.citynet.nl, www.glasvezelamsterdam.nl

⁸¹ <http://lafayetteprofiber.com/OnBackground/FUD.html>

⁸¹ <http://tinyurl.com/392wfd>

the district council for a CHF200m loan to build an open access FTTH network. Unsurprisingly, Swisscom and Cablecom have made statements about how this throws up questions regarding the role of the state and of state aid. The three year pilot phase expires on 8th July, after which the next phase of buildout will be put to a council vote and public referendum. Thus another front opens in the emerging conflict between muni nets and vested interests.”⁸²

27 June 2007
Dirk van der Woude

⁸² <http://eurotelcoblog.blogspot.com/2006/06/every-net-is-full-of-holes-this-astute.html>

Public Private telecom projects in France












As of June 2007

Table 1: Broadband projects of Cities, Communities & Agglomerations ("Collectivités")










Source: <http://www.journaldunet.com/dossiers/hdregions/annuairehdagglomerations.shtml>

Les projets haut débit des villes et des communautés d'agglomération				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Ales (Communauté d'agglomération)	Projet haut débit	Mise en place d'une couverture haut débit du grand Ales	Libertysat, Avant garde Ingénierie (agi)	
Amiens (Communauté d'agglomérations)	Phileas Net	Projet pour la réalisation d'une boucle de télécommunications à haut débit	France CitéVision	
Angers (Angers agglomération)	Boucle Optique Angevine	Réalisation d'une infrastructure de fibres optiques réservé à 5 Groupements fermés d'utilisateurs	nc	
Angoulême (Communauté d'agglomération)	Réseau haut débit	WiMAX et fibre optique	Sogetrel, Covage	
Anzeme (Municipalité)	Expérimentation CPL	Expérimentation CPL en milieu rural	nc	
Ardennes (Communauté d'agglomérations)	Projet "Vallée Numérique"	Mise en place d'un réseau haut débit dans 4 communes	nc	
Arras (Communauté Urbaine)	Arras Numérique	Réalisation d'une boucle locale numérique	Sogea-Marais-Vinci	
Bayonne Anglet Biarritz (Communauté d'agglomération)	Projet haut débit	Mise en service du réseau et des services DSL	LD Com, Node/Overlap	
Besançon (Ville de Besançon)	Réseau Lumière	Réseau privé (GFU) à haut débit desservant les sites publics de la ville de Besançon	nc	
Bordeaux (Communauté d'agglomération)	Projet haut débit	Réalisation d'un réseau haut débit pour les zones d'activité (dans un premier temps)	LD Collectivités	

Les projets haut débit des villes et des communautés d'agglomération

Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
<u>Camps-sur-l'Agly</u> (Municipalité)	Projet haut débit	Réalisation d'un réseau haut débit combinant satellite et Wi-Fi	Nostre Pais	
<u>Castres-Mazamet</u> (Communauté d'agglomération)	Plate-forme numérique Castres-Mazamet 2000	Réseau de télécommunication à haut-débit en fibres optiques	IntermediaSud	
<u>Cergy-Pontoise</u> (Collectivités locales)	Projet haut débit	Développement d'infrastructures de télécommunication	Etat et les collectivités territoriales	
<u>Châlon</u> (Communauté d'agglomération)	Projet haut débit	Mise en place d'un réseau très haut débit en fibre optique	Marais Vinci	
<u>La Chaumière Haut Débit</u> (Association loi 1901)	La Chaumière Haut Débit	Expérimentation de raccordement de lieux isolés au haut débit, dans le Périgord Noir	Région Aquitaine, Conseil général de Dordogne	
<u>Cholet</u> (Communauté d'agglomération)	Projet haut débit	Réseau privé de fibre optique	nc	
<u>Cilaos (La Réunion)</u> (SEM)	Réseau WiFi	Réseau WiFi haut débit dans une région enclavée	Nextiraone, France Télécom	
<u>Clermont-Ferrand</u> (Communauté d'agglomération)	Réseau très haut débit	Réseau métropolitain en fibre optique	Vinci Networks, Marais Contracting Services, Axia	
<u>Cosnes sur Loire</u> (Communauté de communes)	Projet haut débit	Mise en œuvre d'un réseau de télécommunications à haut débit	nc	
<u>Courbevoie</u> (SIPPEREC)	Expérimentation CPL	Expérimentation du CPL en outdoor auprès d'une cible grand public	EDEV CPL Technologie, Tiscali, Tele 2, Mainnet, Schneider)	
<u>Creusot-Montceau</u> (Communauté urbaine)	Boucle locale en fibre optique	Réalisation et exploitation d'une infrastructure passive de télécoms pour supporter des réseaux opérateurs	Groupement Vinci-Networks Marais Consulting	

Les projets haut débit des villes et des communautés d'agglomération

Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Felletin (Ville de Felletin)	Expérimentation Wi-Fi satellite	Expérimentation en vue d'un déploiement	Tiscali	
Fougères (Ville de Fougères)	Projet de boucle locale haut débit	Création d'une boucle locale haut débit à Fougères	nc	
Gonfreville (Commune)	Expérimentation fibre optique	Activer un réseau à très haut débit en fibre optique jusqu'à l'abonné	Axione, Sogetrel	
Grand Rodez (Communauté d'agglomération)	Projet haut débit	Réalisation d'une dorsale locale en fibre optique, complétée par des technologies alternatives	nc	
Haute Provence (Communauté de communes)	Expérimentation satellite + Wi-Fi	Expérimentation de technologies alternatives, dans le cadre de l'appel à projets de la DATAR	nc	
Haute Vallée d'Aspe (Conseil régional)	Projet haut débit	Mise en place du haut débit multi-technologies dans deux villages isolés	Isofac, EDEV Technologie, Eutelsat, Aska	
Lion d'Angers (Communauté de communes)	Expérimentation haut débit	Infrastructure hertzienne reliant des points desservis par FT à des utilisateurs finals situés à moins de 10 km	nc	
Lomagne Gersoise (Communauté de communes)	Projet "Haut Débit"	Mise en réseau de la Communauté de communes et utilisation d'une solution satellite + Wi-Fi	B.E. Partenaires	
Massy-Saclay (Syndicat Intercommunal)	Etude de faisabilité d'un réseau haut débit	Etude sur la définition d'une stratégie en vue de la mise en œuvre d'une politique de développement du haut débit	nc	

Les projets haut débit des villes et des communautés d'agglomération

Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Le Montet (Conseil général)	Expérimentation Wi-Fi	Expérimenter la technologie Wi-Fi dans une commune de l'Allier, en testant le couplage satellite et Wi-Fi.	Ineo-Infracom, Equal	
Montpellier (Commune)	Pégase	Réseau métropolitain en fibre optique	Sacer, Sogetrel, InéoInfracom, Nextiraone	
Nancy (CUGN Grand Nancy)	Réseau métropolitain de télécommunications du Grand Nancy	Réalisation d'une infrastructure à haut débit pour le Grand Nancy	SEM Câbles de l'Est	
Nantes (Communauté urbaine)	O-Méga	Déploiement d'un réseau métropolitain	nc	
Nîmes	Projet haut débit	Déploiement d'un réseau métropolitain	EMSYS, région Languedoc Roussillon	
Paris périphérie (SIPPEREC)	Irisé	Création d'une infrastructure haut débit en fibre optique noire	LDcable	
Paris périphérie (SIPPEREC)	Boucle locale urbaine	Création d'une boucle locale CPL dans 86 communes de la première couronne	Mecelec	
Paris périphérie (SIPPEREC)	Réseau résidentiel FTTH	Déploiement d'un réseau FTTH dans 13 communes	LD Collectivités	
Pau Pyrénées (Communauté d'agglomération)	Pau Broadband Country	Plate-forme de diffusion de contenus IP à très haut débit	Axione, IPVset	
Pays d'Aix (Communauté de communes)	Projet très haut débit	Réalisation d'un réseau communautaire à très haut débit pour le Pays d'Aix	nc	
Pays du Bassée Montois (Conseil général)	Projet haut débit	Etude pour l'aménagement numérique du territoire	Tactis	
Pays du Centre Ouest Bretagne	Expérimentation haut débit	Expérimenter des solutions de	Ibreizh	

Les projets haut débit des villes et des communautés d'agglomération

Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
(GIP)		desserte haut débit sur 3 communes du Pays (satellite, Wi-Fi, CPL)		
<u>Pays Chartrain</u> (Syndicat mixte)	Expérimentation multi-technologies	Projet d'expérimentation de technologie alternative	nc	
<u>Pays des Combrailles</u> (Syndicat mixte)	Expérimentation satellite + Wi-Fi	Expérimentation de technologies alternatives, dans le cadre de l'appel à projets de la DATAR	nc	
<u>Pays du Gaillacois, Bastides et Val Dadou</u>	Expérimentation WIMAX	Expérimentation WIMAX de 6 mois sur 6 sites dans le Tarn	e-Téra	
<u>Pays Loudunais</u> (communauté de communes)	Expérimentation Wi-Fi	Expérimentation de déploiement d'une boucle locale haut débit alternative en Wi-Fi	Optline, Cisco Systems	
<u>Pays Loudunais</u> (Sorégies)	Expérimentation CPL	Expérimentation d'un réseau CPL dans 3 communes rurales autour de Loudun	SIEEDV	
<u>Pays de Montbéliard</u> (Communauté de communes)	Boucle haut débit	Boucle locale à haut débit pour relier les principaux centres d'activité du Pays de Montbéliard	nc	
<u>Pays de Morlaix</u> (Communauté d'agglomération)	Projet haut débit	Déploiement d'une solution d'accès internet haut débit par satellite en complément des réseaux terrestres existants	nc	
<u>Pays de l'Ourcq</u> (communauté de communes)	Expérimentation haut débit	Desserte expérimentale en haut débit et en téléphonie sur IP (WiMax, Wi-Fi)	nc	
<u>Pays de Saint-</u>	Schéma numérique	Sensibilisation NTIC	nc	

Les projets haut débit des villes et des communautés d'agglomération

Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
<u>Brieuc</u> (intercommunalité)	au Pays de Saint-Brieuc	+ déploiement haut débit		
<u>Pays de Sillé</u> (Communauté de communes)	Projet Wi-Fi	Mise en place d'un réseau Wi-Fi	Altitude Télécom	
<u>Pays des Vals de Saintonge</u> (intercommunalité)	Expérimentation Wimax	Expérimentation en vue d'un déploiement sur tout le territoire	Intel, TDF, e-Qual, Alvarion	
<u>Pays Vendômois</u> (Communauté de communes)	Projet haut débit	Expérimentation Wi-Fi + satellite, et fibre optique	Cervoni Conseil, Hexanet, Linux Services	
<u>Périgueux</u> (Communauté d'agglomération Périgourdine)	C@p Connexion	Réseau haut débit (fibre optique, hertzien) couvrant les 13 communes et les 8 ZAE	LDCollectivités-Vinci	
<u>Plaine de France</u> (intercommunalité)	Etude de faisabilité d'un réseau haut débit	Etude de faisabilité technique, financière et juridique	Stratégic Scout	
<u>Quercy, Rouergue, Gorges de l'Aveyron</u> (Communauté de communes)	Projet haut débit	Expérimentation de technologies multimodales alternatives	nc	
<u>Quimper</u> (Communauté d'agglomération)	Réseau très haut débit	Création d'un réseau à très haut débit en fibre optique	Axione	
<u>Reims</u> (Ville de Reims)	Projet de boucle optique	Mise en place d'une infrastructure haut débit au service d'un groupe d'utilisateurs fermé.	Technoman Ingénierie, Sogea	
<u>Rouen</u> (Ville de Rouen)	Réseau haut débit	Réseau haut débit métropolitain	nc	
<u>St-Jean d'Alcapiès</u> (Commune)	Réseau haut débit	La mairie devient opératrice et met en place une infrastructure satellite-WiFi	Nostre Pais	














Les projets haut débit des villes et des communautés d'agglomération				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Saint-Mamet (Communauté de communes)	Projet haut débit	Expérimentation Satellite-Wifi	France Télécom, Sagem	
Scolca (Communauté de communes)	Projet haut débit	Réseau haut débit Wi-Fi + satellite	Corse Télécom, Divona	
Soissons (Communauté d'agglomération)	Projet haut débit	Mise en place d'un réseau très haut débit fibre optique sur la Technopole de l'Aisne	nc	
Sougy-sur-Loire (Commune)	Projet haut débit	Raccordement au réseau LDCOM via le Wi-Fi	nc	
Toulouse (Communauté d'agglomération)	IMT	Création d'une infrastructure de fibre optique mise à disposition des opérateurs	Garonne Networks (Vinci)	
NOUVEAU Tours (Communauté d'agglomération)	Réseau métropolitain	Création d'un réseau haut et très haut débit (fibre optique et WiMax)	Axione	
Truchtersheim (Ville)	Expérimentation haut débit	Expérimentation d'un réseau de desserte WiMax	@rteria, Altitude Telecom, Electricité de Strasbourg	
Val de Cher Saint Aignan (Communauté de communes)	Expérimentation haut débit	Développement d'un réseau très haut débit (satellite + Wi-Fi)	nc	
Valenciennes Métropole (Communauté d'agglomération)	Pôle numérique du Valenciennois	Développement d'une infrastructure haut débit en fibre optique	nc	
Vercors (Communauté de communes, Parc Régional)	Vercors Haut Débit	Développement d'une infrastructure haut débit multi-technologies	Eutelsat, Infosat	

Table 2: Broadband projects of Departments

Source: <http://www.journaldunet.com/dossiers/hdregions/annuairehddepartements.shtml>

Les projets haut débit dans les départements				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Allier (Conseil général)	Projet haut débit	Aménagement numérique multi-technologique et multimodal utilisant la BLR, le Wi-Fi, le satellite et l'ADSL	nc	
Ardèche (Conseil général)	Sivu des Inforoutes de l'Ardèche	Création d'un réseau haut débit + Expérimentations Internet à haut débit hors ADSL (système radio, satellite)	Communes, Sagem, Eutelsat, SitePilot	
Ariège (SIVU)	W DSL en Ardèche	Création d'un réseau haut débit	LD, Altitude	
Aveyron (Conseil général)	Projet haut débit	Création d'un réseau départemental haut débit	nc	
Cantal (Conseil général)	Projet haut débit	Expérimentation Satellite-Wifi sur une commune et réalisation de la couverture des collèges en haut débit par satellite bi-directionnel.	France Telecom, SAGEM	
Calvados (Conseil général)	Projet haut débit	Mise en place de boucles locales à hauts débits	Sat2way, SatLynx	
Corrèze (Syndicat mixte)	Dorsal	Réseau haut-débit multi-technologies	Axione - Sogetrel	
Côtes d'Armor (Conseil général)	Schéma départemental haut débit	Plan de couverture du département en 3 phases, faisant appel à l'ADSL et aux technologies alternatives	nc	
Côte d'Or (Conseil général)	Plan Côte d'Or Numérique	Expérimentation pour l'accès haut débit par satellite pour les zones rurales Développement d'une solution d'accès à l'internet rapide	CNERTA (Centre national d'enseignement et de recherche en technologies avancées)	
Creuse (Syndicat mixte)	Dorsal	Réseau haut-débit multi-technologies	Axione - Sogetrel	

Les projets haut débit dans les départements				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
NOUVEAU Drôme (Conseil général)	Projet haut débit	Haut débit pour tous grâce au WiFi et création d'un réseau de fibre optique	nc	
Eure (Conseil général)	Projet haut débit	Projet de boucle optique pour équiper l'ensemble du département	Altitude Télécom	
Gers (ADNTIC)	Etude d'infrastructures haut débit	Etude d'infrastructures pour développer le haut débit dans le Gers	Conseil régional de Midi-Pyrénées	
NOUVEAU Haut-Rhin (Conseil général)	Réseau haut débit	Couverture du département en WiMax et FTTH	LD Collectivités, Est Vidéo Communication	
Haute-Garonne (Conseil général)	Programme de couverture des zones blanches	Réaliser une infrastructure qui accueillera des technologies alternatives à l'ADSL afin de compléter le réseau de France Télécom	nc	
Haute-Marne (Conseil général)	Déploiement du haut débit	Equipement de tous les répartiteurs	HDDR	
Haute-Savoie (Conseil général)	Expérimentation haut débit	Fournir un accès haut débit tous secteurs d'activités confondus.	nc	
Haute-Vienne (Syndicat mixte)	Dorsal	Réseau haut-débit multi-technologies	Axione - Sogetrel	
Hauts-de-Seine (Conseil général)	Réseau très haut débit	Déploiement d'une infrastructure fibre optique	nc	
Indre (Conseil général)	Projet de "boucles rurales"	Desservir les zones non couvertes par l'ADSL par le satellite	nc	
Isère (Conseil général)	Etude sur l'aménagement haut débit du territoire	Etude sur l'aménagement haut débit de l'Isère et subventions d'études locales	nc	
NOUVEAU Jura (Conseil général)	Réseau départemental haut-débit	Réseau départemental de desserte en haut-débit : Wimax, fibre optique...	APRR-Altitude	

Les projets haut débit dans les départements				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Loire (Conseil général)	Cyberloire	Réseau de points d'accès haut débit + création de cybercentres	Axione, TDF	
Loiret (Conseil général)	Haut débit pour tous dans le Loiret	Construction d'un réseau multitechnologies destiné à couvrir 100 % du territoire	LD Collectivités	
Lot et Garonne (Conseil général)	Boucle locale haut débit à Agen	Etude de mise en oeuvre d'infrastructures de télécommunication et déploiement d'une boucle locale haut débit	nc	
Maine-et-Loire (Conseil général)	Melis@	Etude sur la mise en place d'une infrastructure de télécommunications haut débit	Sagem, Vinci Networks, Sogea Construction, Cofiroute, Marais Contracting	
Manche (Conseil général)	Programme BUS	Mise en place d'un réseau en fibre optique, et de boucles locales WiFi, Wimax et CPL	Sogea (infrastructure), LD Collectivités, Vinci et Axia (extension et exploitation du réseau)	
Moselle (Conseil général)	Réseau départemental	Mise en place d'une boucle locale haut débit	Sogea (Vinci), LDC, Axia, TDF, Altice	
Nièvre (Conseil général)	Boucle départementale haut débit	Mise en place d'un réseau multi-technologies	ETDE, Axione	
Oise (Conseil général)	TéLOise	Déploiement d'infrastructures haut débit pour le département de l'Oise	Teloise (LD Câble, Sogetrel)	
Orne (Conseil général)	Aménagement haut débit	Aménagement d'un accès haut débit pour tous les foyers ornaïens, via le WiMAX et la BLR	Altitude Télécom	
Pyrénées Atlantiques (Conseil général)	Iris 64	Construction et déploiement d'un réseau haut débit sur l'ensemble du	Groupement Iris 64 (Sogetrel / LD Collectivités)	

Les projets haut débit dans les départements				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
		département		
Pyrénées Orientales (Conseil général)	Schéma départemental haut débit	Mise en place d'un réseau haut débit multimodal	France Télécom	
Rhône (Conseil général)	Les Autouroutes Rhodaniennes de l'Information	Réseau, de technologie hybride fibre-coaxial qui dessert toutes les communes du département	Opérateur UPC France (United Pan-Europe Communications)	
Sarthe (Syndicat mixte sarthois d'aménagement numérique)	Réseau haut débit sarthois	Mise en place d'un réseau haut débit public neutre et pérenne combinant plusieurs technologies (fibre optique, xDSL, WiMax, hertzien)	Sartel, Sagem-Cegelec	
Seine-et-Marne (Conseil général)	Sém@for	Construction d'un réseau départemental très haut débit	Axia France, Vinci Network	
Seine Maritime (Conseil général)	Projet haut débit	Mise en place du haut débit dans le département, en recourant à des technologies complémentaires de l'ADSL	nc	
Somme	Phileas Net	Déploiement d'une infrastructure optique à haut débit.	France CitéVision, SOGETREL	
Tarn	Réseau haut débit	Mise en œuvre d'une infrastructure haut débit en mode de gestion directe	e-tera	
Tarn-et-Garonne (Conseil général)	Plan d'équipement haut débit	Signature de la charte "Département innovant" de France Télécom, création d'un réseau de fibre optique	France Télécom	
Vendée (Conseil général)	Plan 100 % haut débit	Projet multi-technologies destiné à couvrir 100% du territoire	Altitude Télécom, France Télécom, Neuf télécom	








Les projets haut débit dans les départements				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Yvelines (Conseil général)	Haut Débit 78	Construction d'un réseau de 160 km de fibres optiques	Eiffage	

Table 3: Broadbandprojects of Departments

Source: <http://www.journaldunet.com/dossiers/hdregions/annuairehdregions.shtml>

Les projets haut débit dans les régions				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Alsace (Conseil régional)	Boucle haut débit régionale	Mise en place d'une boucle régionale en fibre optique reliant trente villes d'Alsace	Sogetrel, LD Collectivités, Est Vidéo	
Aquitaine (Conseil régional)	Schéma régional haut débit	Schéma directeur de desserte en haut débit sur le territoire régional	Conseils généraux des départements, Communautés d'agglomération (Périgueux, Agen, Pau...), Communauté urbaine de Bordeaux	
Basse-Normandie (Conseil régional)	Vikman	Réseau régional d'accès à internet basé sur des technologies hertziennes (BLR) et filaires, mis en place pour relier entre eux des sites publics	Altitude Télécom, France Télécom, Télécom Développement, Optline Service, Communication et Systèmes	
Bretagne et Pays de la Loire (Conseils régionaux)	Megalix	Offre de services télécom à haut débit à disposition de communautés spécifiques, dites d'intérêt général.	France Telecom, Neuf Telecom	
Bretagne (Syndicat Mixte Megalix)	Megalix II	Réseau très haut débit nc succédant à Megalix		
Centre (Conseil Régional)	Projet haut débit	Mise en place d'une boucle optique	France Télécom	
Champagne (Conseil régional)	Telemus	Offrir aux particuliers et aux entreprises un accès Internet haut	9 Télécom(Groupe LDCOM)	

Les projets haut débit dans les régions

Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
		débit.		
Corse (Conseil régional)	RHDCOR	Edification d'un réseau de fibre optique desservant les zones denses, et intervention sur les zones non denses et rurales	Corsica Haut Débit (France Télécom)	
Franche-Comté (Conseil régional)	Belin 3	Mise en oeuvre d'un réseau Internet à haut débit	9 Telecom (Groupe LDCOM)	
NOUVEAU Guyane (Conseil régional)	Réseau haut débit	Réseau haut débit associant fibre optique, hertzien, satellite, DSL, Wi-Fi	SOGETREL-MEDIASERV	
Languedoc-Roussillon (Préfecture régionale)	AccèsLR	Développement de l'internet haut débit par satellite bidirectionnel pour les territoires enclavés de la Région Languedoc-Roussillon	Conseils généraux, Sat-Links, Cabinet EMSYS	
Limousin (Conseil régional)	Dorsal	Réseau haut-débit multi-technologies	Axione - Sogetrel	
Midi-Pyrénées (Conseil régional)	"Midi-Pyrénées à haut débit"	Etude de la mise en place d'un réseau haut débit	nc	
Nord Pas-de-Calais (Conseil régional)	Suivi d'études projets	Veiller à une homogénéité territoriale de l'ensemble des projets d'infrastructures haut débit	nc	
Picardie (Conseil régional)	Dispositifs haut débit	Mise en oeuvre du dispositif Service Universel Haut Débit et élaboration du Schéma Régional de Développement des Infrastructures de Télécommunications	CDC	
Poitou-Charentes (Conseil régional)	Territoires numériques en Poitou-Charentes	Projet haut débit en faveur des territoires ruraux	nc	

Les projets haut débit dans les régions				
Collectivités	Nom du projet	Nature du projet	Principaux partenaires	En savoir plus
Provence Alpes Côte d'Azur (Conseil régional)	Réseau Régional à très haut débit	Construction d'une dorsale télécom régionale	Complétel, Colt, Kaptech et France Télécom	
Réunion (Conseil régional)	Projet Gazelle	Réseau régional mutualisé, à très haut débit desservant toutes les communes de l'île	EDF, Outremer Télécom	
Rhône-Alpes (Conseil régional)	Etude de faisabilité	Etude de faisabilité d'une desserte très haut débit en Rhône-Alpes Sud	nc	