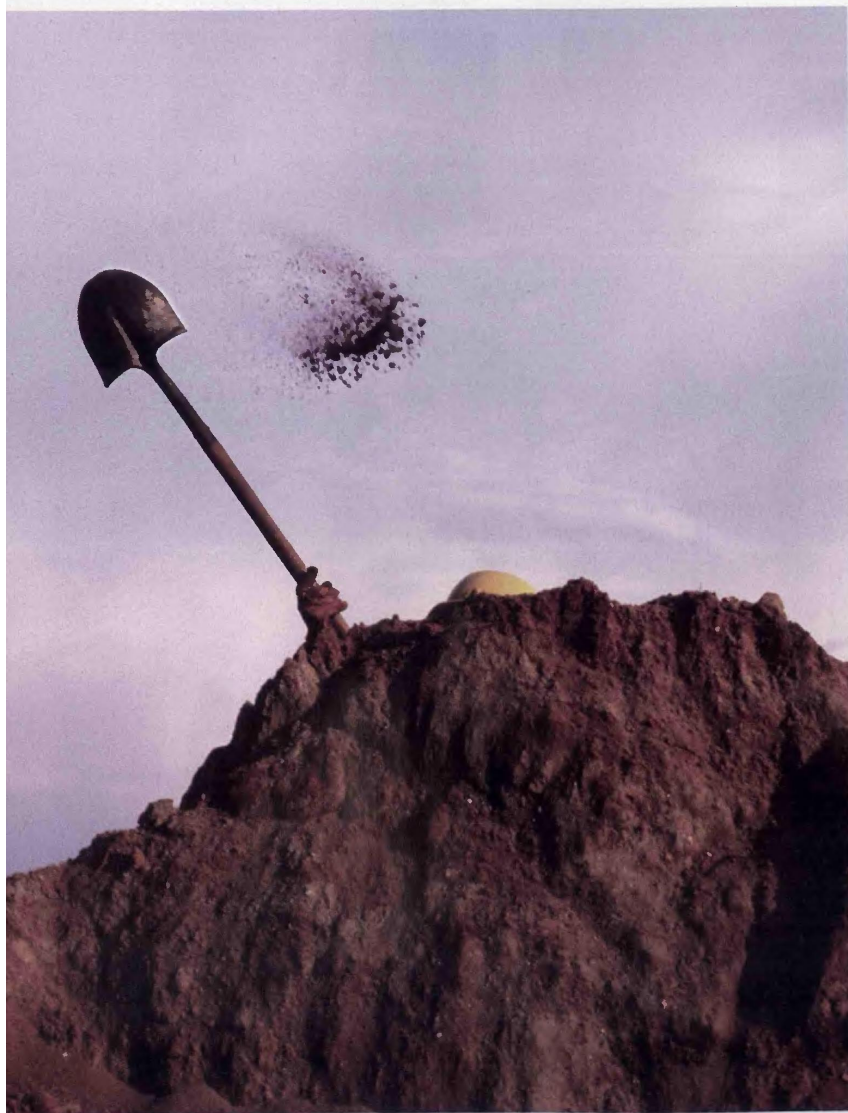


Digging deep for a competitive edge

*Broadband rivalry spurs Tier 1
FTTx investment*

by Ken Wieland



JOERIVAN BOGAERT is in an upbeat mood. As president of the FTTH Council Europe, he sees momentum building for fiber-to-the-home rollout. "A lot of the barriers for FTTH deployment are coming down," he says. "We're getting to the stage where incumbents have to respond to FTTH competition from other players."

Tier 1 FTTH, FTTN (fiber to the node) and VDSL2 investment in Europe has come primarily in countries where broadband rivalry is strongest. The bulk of FTTx subscribers in Europe, for example, are in Sweden, Italy, Denmark, Netherlands, Norway and France. In these countries, due to the broadband investment of utility companies, alternate operators, cable operators or municipalities, Tier 1 players—despite the eye-wateringly high level of capex required—are beginning to roll out fiber in the last mile.

France Telecom arguably is taking the lead in Tier 1 FTTH investment in Europe. With rivals Iliad and Neuf Cegetel snapping at its heels with FTTH-based services of their own, France Telecom announced last summer it was expanding its FTTH offering beyond Paris. By the end of 2008, the French incumbent aims to pass 1 million homes with fiber across 12 major French cities and to have between 150,000 and 200,000 FTTH subscribers. France Telecom's capex bill for FTTH rollout during 2007 and 2008 is projected to reach €270m (US\$370m).

Competitive pressure continues to mount, however, on France Telecom. Last August Iliad launched a 100Mbps downlink and 50Mbps uplink service for only €29.99 (US\$41.50) per month, which includes a TV service and free fixed-line calls within France. France Telecom is charging €45 (US\$62.50) per month for its basic package of TV, voice calls and high-speed (100Mbps) Internet access.

By contrast, in the UK, where there is no FTTH or FTTN competition, BT has no immediate plans to roll out fiber, either to the street cabinet or right up to the customer premises (except in greenfield sites). It is sticking to ADSL2+, which BT believes will be able to give the majority of its customers between 10Mbps and 12Mbps on the downlink.



A story surfaced in the UK *Financial Times* last summer about BT looking seriously for the first time at installing FTTH to deliver downlink speeds of up to 50Mbps, but, according to a BT spokesperson, this is not the case. "There has been no change in our position," he says. "While we will continue to look at FTTH and FTTN, it is still a very expensive thing to do."

Another factor that perhaps has generated more enthusiasm for FTTH deployment in France than in the UK is the lack of a developed pay-TV market, which gives the FTTH players in France a greater chance of making inroads with triple-play bundles.

Of course, considerations other than broadband competition between carriers can help stimulate FTTH and FTTN investment. In South Korea and Japan, for example, government initiatives have helped Asia take an FTTH lead (see *Economies with highest penetration of FTTH & FTTB-LAN*, page 20). In the United States, an FCC ruling relieving RBOCS of their local loop unbundling obligations for fiber in the last mile has encouraged Verizon and AT&T to invest heavily in their respective FTTH and FTTN networks.

Having a future-proof network capable of delivering bandwidth-hungry services that might not have even been thought of yet appears to be the ultimate driver for FTTH investment (although catering for an unknown future clearly has its risks).

There are, however, differences of opinion in the carrier community as to the right timing of FTTH investment and whether it really is necessary to roll out fiber right up to the premises to enjoy a competitive edge. This difference of approach is seen most clearly in the U.S., where Verizon is opting for FTTH, or FTTP (fiber to the premises) as the company describes it, and AT&T is going for a combination of FTTN and VDSL2.

FTTH & FTTN race in U.S.

"There is not a network out there [in the U.S.] that can match what FTTP can do," says Brian Whitton, Verizon's executive director of technology.

In terms of raw bandwidth speed, Whitton is correct. Verizon's current highest downlink speed product is 50Mbps, with an uplink speed of 10Mbps. This overshadows both the cable operators and AT&T (AT&T's highest downlink speed over FTTN plus VDSL2 is 6Mbps; the uplink 1Mbps).

Whitton believes Verizon, using a GPON FTTH architecture where up to 32 users can share 2.48Gbps bandwidth, has a lot more scope to ramp up data throughput in the event of increased demand. "Through statistical multiplexing, we can offer sustained rates of 200Mbps and peak rates of 400Mbps," he says.

European cable operator aims for 200Mbps

UPC, a pan-European cable operator, announced the start of EuroDocsis 3.0 field trials last month with "several customers" in Amsterdam. Using Cisco equipment, UPC claims to have delivered downlink throughput of 120Mbps and uplink speeds of 10Mbps over its HFC (hybrid fiber coaxial) network. "We're aiming to offer eventually more than 200Mbps," a UPC spokesperson says. (Docsis, or data over cable service interface specifications, is an international standard developed by CableLabs for data transmission over HFC networks.)

The UPC spokesperson is unable to reveal a timetable for commercial EuroDocsis 3.0 rollout, as trials are at an early stage, nor does he disclose the amount of investment required to upgrade its current EuroDocsis 2.0 HFC network. The maximum downlink speed UPC offers its customers today is 20Mbps with an uplink speed of 1Mbps.

High-speed broadband competition is heating up in Amsterdam. The CityNet project, financed in part by municipal funds, already has connected 40,000 households in the district of Zeeburg with fiber. Using an AON (active optical network) FTTH architecture, CityNet offers guaranteed symmetrical speeds of 100Mbps. CityNet's aim is to connect more than 400,000 households in Amsterdam within five years. The business model for the infrastructure investors in the CityNet project, which includes housing societies, ING Real Estate and the City of Amsterdam, is built on an open access model where they lease capacity to service providers.

UPC objects to the use of public funds for broadband investment, however, and has filed two injunctions with Dutch courts against CityNet—each unsuccessful—in an attempt to derail the FTTH project. "In the Netherlands, there is a lot of broadband competition between the cable operators and KPN," the UPC spokesperson says. "We have always said there is no need for state interference."

UPC is now taking its case to the European Commission. A decision is expected before the end of the year.

Even an ardent supporter of FTTP such as Verizon still will have the majority of its wireline customers served by DSL beyond 2010. This is simply because the economics of deploying a truly nationwide FTTP network don't stack up at this stage.

Between 2004 and 2010, Verizon plans to invest US\$18bn to pass 18 million U.S. premises with its fiber network: just over half the approximately 33 million households it serves in its 28-state wireline area. By 2010, Verizon aims to have between 3 million and 4 million FIOS TV customers, delivering its TV service by RF overlay (a digital TV broadcast technology). Verizon intends to offer VoD and niche content over an IPTV architecture. At the end of last June, Verizon's FTTP network had passed 3.9 million households in the 12 states where it is rolling out fiber and had acquired 515,000 FIOS TV customers.

To keep within its capex budget, Verizon is working on the assumption it can reduce by 2010 the cost per home passed and cost per connection to US\$700 and US\$650 respectively (at the end of 2006, cost per home passed was US\$850 and cost per connection US\$880).

As well as cutting better deals with its GPON suppliers, Whitton believes the introduction last summer of "just inside" ONTs (optical network terminals), which are placed inside the house and have their own back-up power supply within the ONT shell, will reduce the engineer's installation time (although Whitton does not say how much cost savings the "just inside" ONTs will accrue).

"We're also introducing plug and play fiber to connect homes to the [PON] splitter, which removes the need for splicing and which will reduce costs," Whitton adds.

Although Verizon is enjoying some FIOS TV take-up momentum, AT&T's U-verse video service, using an all-IPTV architecture delivered over FTTN and VDSL, is also beginning to pick up pace after long delays (reportedly related to scaling up problems associated with Microsoft's IPTV platform).

"The glitches have been ironed out," an AT&T spokesperson says. "We have 100,000 subscribers [as of mid-September] with 5 million homes passed." Given that AT&T only had a few thousand subscribers at the beginning of this year, the provider appears to be



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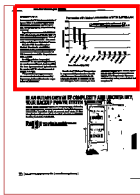
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Broadband strategies

FTTx

(Continued from page 16)

business case for FTTH deployment with hard figures. "We're in discussions with specialist analysts from the financial world," Bogaert says. "We are looking into the questions they are asking."

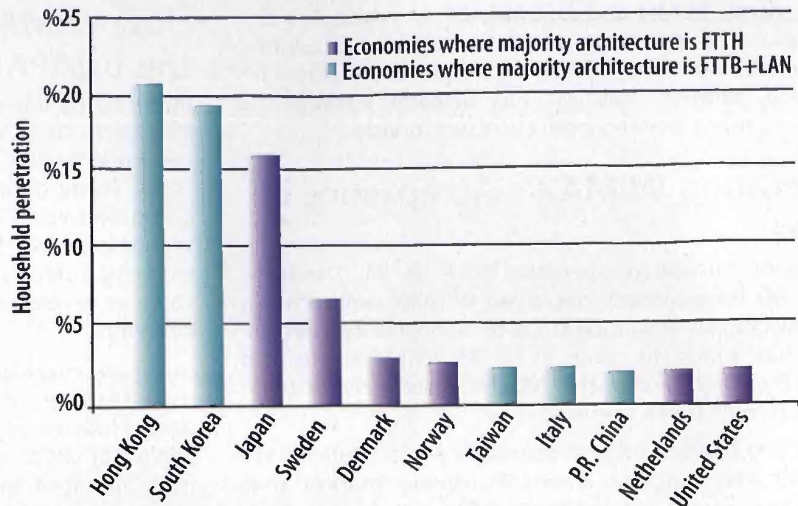
Bogaert says some economic modeling on FTTH will be ready by next February, when the Council holds its annual conference. "This is all about the maturing of the information we are making available to our stakeholders," he says.

When the FTTH Council Europe announced Bogaert as its newly elected president last April, it coincided with another announcement: to increase the number of FTTH connections tenfold in Europe between 2010 and 2012.

For all the optimism surrounding increased FTTH take-up within the Council, the numbers are still small. As of June 2006 (the latest figures produced by the Council) the number of FTTH subscribers stood at 820,000 in Europe.

"The tenfold increase target is more on the conservative than the ambitious side," Bogaert says, "and we will review that target in the next few months."

Economies with highest penetration of FTTH & FTTB+LAN



Source: FTTH Council (July 2007)

How far the FTTH Council Europe raises its targets could depend on the outcome of the European Commission review on access regulation to be published by the end of this year. "At the moment, we have

regulatory uncertainty as national regulators can put different interpretations on existing rules," Bogaert says. "Operators need certainty so they can make their business plans." ●