FIBRESYSTEMS Europe

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OPINION

FTTH: Europe must open its eyes

With Japan racing ahead on FTTH build outs, Hartwig Tauber of the FTTH Council Europe outlines the deployment status in Europe today and proposes some reasons for Europe's apparent ambivalence.

A RECENT VISIT to the FTTH Council Asia–Pacific conference in Japan provided a stark reminder of the gap that must be closed if Europe is to obtain the kind of communications infrastructure that the rest of the world is already enjoying. Instead of investing in fibre for a successful future, it is almost unbelievable that many in Europe continue to debate whether fibre is really needed at all.

In a report conducted early in 2006 for the UK's Department of Trade and Industry, research group Analysys concluded that residential broadband subscribers required no more than 22 Mbit/s to attain the services that they demand. Yet in places like the Far East, fibre-driven connection speeds regularly exceed 100 Mbit/s.

What's more, there are already four times as many fibre-to-the-home (FTTH) subscribers in Japan than in the whole of Europe – and the gap is widening. Circumstances may be different, with diverse cultural drivers for demand evident. But none of this comes anywhere near to explaining how, by the end of the decade, a population of 130 million will be using an infrastructure that's 500% larger and faster than that used by a population of more than 700 million.

Partner projects

There are currently around 750 000 FTTH subscribers throughout Europe (according to market analyst IDATE), although the number of homes passed is more than 2.5 million. And within Europe, fortunes differ country by country. To date, 97% of FTTH subscribers are concentrated in just five countries: Sweden, Italy, Denmark, Norway and the Netherlands. The rest of the continent lags far behind, and new-build activity – particularly in the 10 new EU member states – remains low.

On a more positive note, the drivers for further FTTH deployments do exist. These vary from country to country and include: cable TV penetration, encroachment of voice-over-IP traffic on telecoms operators' traditional voice business, maturity of deregulation and unbundling. Highly innovative municipality-controlled broadband projects represent a growing influence on the overall penetration figures for Europe. There are also compelling arguments that Eastern Europe represents a nascent, "yet to understand" pool of potential.

Hartwig Tauber: "My hosts [in Japan] looked with great pity at the lengths their European cousins have to go to in order to realize even the most modest next-generation broadband deployment."

I highlighted much of this evidence to delegates at the FTTH Council Asia–Pacific conference. But when I began outlining the success and ambition of municipality projects such as those in Reykjavik and Amsterdam, I was met with complete and utter puzzlement. My hosts regarded public–private passive fibre infrastructure business models as a strange concept, and looked with great pity at the lengths that their European cousins are having to go to in order to realize even the most modest next-generation broadband deployment.

Two-thirds of the small number of European FTTH deployments have been initiated or completed by municipalities and utility companies, and these increasingly common projects are becoming more and more ambitious. Public authorities have strong stomachs when it comes to large long-term capital investments, as well as the mandated willingness to invest for the benefit of the local population.

The one obstacle to municipality-owned broadband deployments is telecoms regulation, which is set in play to prevent market distortion. Traditional operators also frequently cite a lack of regulatory clarity as the reason for their lack of fibre investment, which in turn leads to market failures. Paradoxically, "market failure" (apparently caused by poorly defined regulations) is the very evidence that municipalities must prove to gain the regulatory blessing to start their deployments.

Few municipalities fail to prove that next-generation fibre deployment constitutes a "service of general economic interest", and thereby gain *de facto* regulatory approval in the wake of visible market failure. But in some situations – as was the case for the Dutch town of Appingedam earlier this summer – the European Commission (EC) judges that market failure does not exist and that incumbent operators (using cable and/or Digital Subscriber Line) are keeping reasonable pace with the growth of local bandwidth demand.

The next few months promise to be an enormously important time for traditional telecoms operators in Europe, as the EC arrives at its definitive position on fibre regulation. However useful the municipalities have been at "fighting the cause", there is no question that Europe urgently needs its incumbent carriers on board. The

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FTTH Council Europe is now working to finalize its recommendations to the consultation exercise, and future developments are not yet clear.

Despite the views of the sceptics, it is inconceivable that European bandwidth demand will not increase markedly over the next five years. An explosion of digital content and applications, together with a similarly large proliferation of complex, mobility-enhancing devices has given the home (as well as the business) a newfound appetite for broadband. And this is stretching the capabilities of the simple central office/local exchange access network to its furthest limits.

Much evidence exists to suggest that future bandwidth demand will be driven by more specialized, personalized content. Multichannel TV has offered a glimpse of this, with content tailored for the most obscure of tastes, as well as the most popular. This specialization also drives users' aspirations to interact with, or even create, content. The natural evolution of TV-type services in the ultrahigh-speed broadband world will eventually see subscribers managing and developing their own content, with all users able to distribute high-quality video.

Several non-entertainment-related services are also set to stimulate large bandwidth usage within the home. The increasing trend towards teleworking, for example, can consume a surprising amount of bandwidth – particularly when users require an always-on, highly secure (using advanced encryption and authentication) connection to self-service applications such as multipoint video conferencing and business TV broadcasts. Add to this the rising instances of remote patient monitoring, distance learning, e-banking and e-government, plus an escalating demand for online gaming, personal video recorders and pay-per-view programming, and it's clear that all roads lead to greater bandwidth demand.

Fibre's unique selling point is its ability to allow concurrent use of many different bandwidth-intensive applications. Moreover, service providers that leverage a fibre-based network can easily package services into unique bundles and generate significant revenue streams.

From a macroeconomic perspective, FTTH provides a vital infrastructure for supporting the emerging highly skilled service industries of Europe. A 15 year study conducted in Australia by the Allen Consulting Group provides a much-vaunted proof for the macroeconomic benefits of FTTH. The study compared the relative impacts of a vertically integrated service provider (VISP) approach and an open-access network approach upon a major Australian conurbation. The resulting differences between the two approaches were minor, but both results emphatically demonstrated the overwhelming benefits of a "true" broadband implementation. These included a notable increase in regional/statewide gross domestic product, a massive increase in employment, and a large increase in industrial productivity, particularly in non-telecoms sectors.

Novel model

The deployment costs for FTTH are constantly reducing – a fact that's increasingly substantiated by various market-research sources. Lower-cost access components plus improved efficiency in fibre laying continually ease business models for a copper-to-fibre transition.

At the FTTH Council Europe's own 2006 conference in Vienna, NTT Access Service Systems Laboratories of Japan reported the ingenious breakthroughs that it has made at practically all stages of fibre deployment and

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provisioning. On the strength of these advances, NTT is the first operator globally to pronounce that it regards copper and fibre deployment as broadly equal in terms of costs, complexity and management.

Back in Europe, regulatory inertia has influenced the structural formation of operator business models. Typically, the classic VISP model prevails in mid and southern Europe, with FTTH deployments generally introduced by incumbent or new-entrant operators. Several large players, including Deutsche Telekom of Germany, Telefonica of Spain and France Telecom, look set to make modest yet encouraging forays into deeper fibre penetration with roll-outs and pilot projects.

In northern Europe, however, and particularly in Scandinavia, a more horizontal model exists (figure 1). Here, FTTH networks are being built by utility companies or municipalities that act as infrastructure providers, while the network is run by a pure operator that plays no part in providing retail services. Instead, this operator offers network access to service providers in a nondiscriminatory way. This open-access approach is considered highly advantageous to many in the fibre community – although incumbent operators feel that it distorts the market, particularly if public finance is involved.

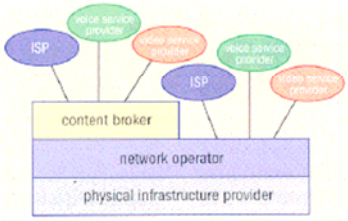

Fig. 1: The structure of an open-access network.

The Reykjavik FTTH project is an excellent example of the open-access approach to a horizontally integrated business model. Reykjavik Energy (RE) is an independent service company owned by the municipalities that serve the 80 000 homes in the south west of Iceland, where most of the country's population is based. Already providing electricity, geothermal-powered heating and drinking water to homes via a highly sophisticated set of distribution networks, RE has chosen to invest in fibre as a "fourth utility". The project, which is due to conclude in 2011, comprises several commendable elements that serve to benefit the Icelandic people. These include:

- synchronicity between RE and other groups, such as the roads department to minimize the costs of trench digging;
- an overbuild strategy in which homes that are passed are provided with a free customer premises switch, regardless of whether they have signed up for a service;
- an open-access policy that prevents RE acting as a service provider (only as a network operator);
- low connection fees of €25 for a basic 100 Mbit/s connection;
- a long-term investment model that will see RE realize a positive financial return in a minimum of 15 years.

All fibre deployments will migrate towards and eventually arrive at FTTH. It is the end-game reference technology for broadband, owing to its near unlimited capacity, non-degrading reliability and fully symmetrical nature. Europe needs a fibre infrastructure to compete in the global economy. There is no doubt that all eyes are on us now – the question is: are our own eyes open?

Hartwig Tauber is president of the FTTH Council Europe. For more information see www.europeftthcouncil.com.