



KEY FINDINGS

Catalysts for municipal fiber networks include aiding local business and the economy and providing a utility broadband service to citizens

Frustration with local incumbent telcos is often a key motivator for municipal initiatives

Funding mechanisms vary, including public-private partnerships and funding by municipal energy utilities

Open-access network mechanisms are seen by all builders as an essential prerequisite and a key part of the municipal network business case

Sharing of revenues between network owners and service providers is widely seen as a key corollary to open-access networks

JANUARY 2006

EXECUTIVE SUMMARY

The Business Case for Municipal Fiber Networks

For the most part, fiber to the home (FTTH) has been driven in Europe not by incumbent telcos, but by local and regional initiatives – often begun, promoted, or directly funded by municipalities and local authorities, or by local utilities that are owned by the municipality.

This White Paper examines the ways in which municipalities have constructed a business case for FTTH, primarily through detailed examination of three specific municipal FTTH networks. These are:

- Almere, Netherlands
- Reykjavik, Iceland
- Vasteras, Sweden

As the report shows, motivations for building fiber networks vary, as do funding mechanisms and business and service models.

However, all of these cities believe that municipal fiber networks offer a real alternative to the incumbent telco or cable MSO model, as well as some real advantages to the municipality, its businesses, and its citizens and consumers. We expect to see municipal fiber networks spread steadily throughout Europe in the next five years, especially if incumbent telcos continue to drag their feet.

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This report was prepared for the FTTH Council Europe by *Heavy Reading* (www.heavyreading.com).

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I. Introduction and Key Findings

For the most part, FTTH has been driven in Europe not by incumbent telcos, but rather by local and regional initiatives – often begun, promoted, or directly funded by municipalities and local authorities, or by local utilities that are owned by the municipality.

The motivation for these initiatives varies. Among other things, municipalities seek to:

- Support local businesses and the local economy.
- Prevent outward migration of both businesses and households.
- Encourage technology and digital content firms to locate in the area.
- Aid local government, health, education, and other public bodies to perform more effectively and efficiently.
- Provide a universal, high-quality utility service to local citizens, analogous to local highways, public transport, or electricity.

Initiatives are often also motivated by a sense of frustration with other local suppliers, typically the incumbent telco and/or cable MSO. And in some cases, the initiatives are largely the work of utilities, likening fiber broadband access to water or electricity supply.

However, simply creating the idea is not enough. Municipalities (or their utility partners) must find ways to overcome objections made on financial, socioeconomic, commercial, regulatory, or other grounds, to build a convincing business case that enables authorities to push forward with their proposals.

This White Paper examines the various ways in which municipalities have built business cases for FTTH, primarily through detailed examination of network initiatives in three specific cities. These are:

- Almere, Netherlands
- Reykjavik, Iceland
- Vasteras, Sweden

Figure 1.1 provides basic data on the fiber networks in these cities.

Figure 1.1: Basic Data on Three European FTTH Projects

CITY	POPULATION	HOUSEHOLDS	CONNECTED HOUSEHOLDS*	CONNECTED BUSINESSES	CONNECTED HOUSEHOLDS, 2007	PROJECTED COMPLETION DATE
Almere	180,000	75,000	1,700	500	20,000	2010
Reykjavik	200,000	75,000	4,000	300	25,000	2009-2011
Vasteras	130,000	60,000	30,000	2,000	45,000	2007

*Source: Heavy Reading; projections for 2007 are Heavy Reading estimates, based on information provided by the municipalities. *October 2005*

All three of these cities are strongly committed to the construction of an all-fiber network that reaches everyone in the municipality who wants to connect to it. There are other common themes in these case studies, but some significant differences in approach.

Themes common to all of these networks, and to most other municipal networks in Europe, include:

- **Central importance of open network access.** This is probably the single most important characteristic of municipal networks.
- **Layered network** in which suppliers of network equipment, services management, and services are clearly separated into at least two layers (see **Figure 1.2**).
- **Importance of business customers in the mix.** Businesses are often an essential source of revenue in the early stages of a project.
- **Wide mix of services offered,** usually including multimegabit symmetric Internet service, a wide range of video services, and services based on high upstream capacity.
- **Revenue-sharing arrangement** between suppliers of the passive or active layers and suppliers at the service layer.
- **An intention to become the primary or only infrastructure provider,** building a long-lifetime network that, with its open-access characteristics, will obviate the need for any other fiber infrastructure.

Figure 1.2: Typical Layered Network Arrangement

LAYER	EXAMPLES OF INCLUDED ITEMS
Service	Triple play, VOIP, Internet access, etc.
Active	Optoelectronics, routers, etc.
Passive	Ducts, fiber

Source: Heavy Reading

However, there are also differences in these projects. In particular:

- The three municipalities differed significantly in charging and pricing models: Malarenergi, the utility running the project in Vasteras, charged the full cost of connecting customers, including individual households, while Reykjavik Energy connected all households free.
- There were also important differences in the degree to which the local municipality itself was involved, with Almere heavily involved and Vasteras leaving most of the decisions to Malarenergi.
- Finally, two of the networks – Reykjavik and Vasteras – were entirely underwritten by the local utility, although in both cases the utility was owned by the municipality itself.

The lesson from these examples is that the case for municipalities to build fiber networks can be made on a variety of grounds, but that the business case is likely to be built partly on the basis of local circumstances. For example, where a locally owned utility has already created a fiber backbone, it makes good sense to give it first rights to build the network, thus reducing direct costs to the local authority.

But the most important lesson is that the business case can and is being made, and is becoming a strong one.

Municipal fiber networks offer a real alternative to the incumbent telco or cable MSO model, as well as some real advantages to the municipality, its businesses, and its citizens and consumers. We expect to see municipal fiber networks spread steadily throughout Europe in the next five years, especially if incumbent telcos continue to drag their feet.

Figure 1.3: What They Get, What They Pay

CITY	BASIC MONTHLY CHARGES	SERVICES
Almere	€50	Basic 100-Mbit/s connectivity Symmetric 30-Mbit/s Internet service VOIP with free calls in city Free-to-air TV
Reykjavik	€25	Basic 100-Mbit/s connectivity Free-to-air TV Gateway and set-top box
Vasteras	€23	Basic 100-Mbit/s connectivity 10-Mbit/s Internet service VOIP with free calls in city

Source; Heavy Reading

Only basic service packages are shown; a wide range other services and options are available.