The Open Infrastructure Model

The Most Bandwidth For The Least Cost

How property managers, network owners, municipalities and customers can be winners.

by Vladimir Prodanovic

Author Profile

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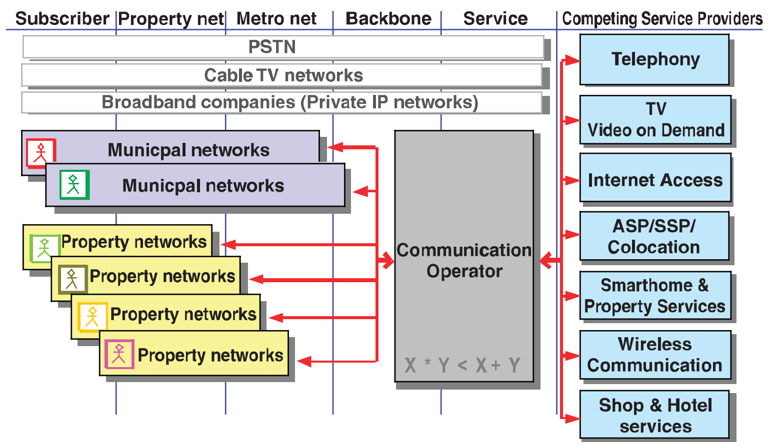
Growing demand for higher-quality, faster and reliable broadband service is spurring not only innovation, but also network expansion. To-date, however, both the innovation and the expansion have been confined to the network owners and service providers – the companies that own and inhabit the cable or digital subscriber line (DSL) infrastructures. As a result, end-user customers have had limited choices for broadband services.

Moreover, the arrangement generates no revenue from the broadband services for the real estate developers and municipalities that literally laid the foundations for delivering these services "the last mile" into the end users' homes.

Moving forward in time, it is clear that a new broadband technology infrastructure – fiber-to-the-home or FTTH – must be built in new and existing real estate developments, to continue to meet demand for increasing bandwidth. And as the FTTH infrastructure is built, however, it will be crucial for the investment, the revenue and the profits to be distributed among the main beneficiaries, including the real estate companies and municipalities, which must shepherd regulations that encourage this development.

Incumbent Issues

Besides technology advances in cable and DSL infrastructures, the range of broadband applications is expected to grow in com-



A simplified example of the open infrastructure model.

ing years. The services that are expected to expand include digital TV, video-on-demand and Voice over IP (VoIP) telephony.

Nevertheless, among the DSL network owners worldwide, the rate of deployment of digital TV will vary from country to country, because of the variable quality of the nations' copper networks. And quality concerns will lead the owners of the digital TV "content" to have ongoing concerns about the quality of the user's experience and the security of the content against piracy.

In the short term, it is certain that the incumbent network owners will defend their large installed base of broadband users, possibly by cutting exclusive deals with the content owners covering the use of the networks

But in the final analysis, the cable and DSL networks are closed networks. And because regulations regarding open access to those networks still are not fully implemented, there remains a "chicken and egg" problem that is limiting innovation in the delivery of these services over broadband. The network owners are not willing to deploy new services unless there are customers. New companies are willing to develop new services, but because of incumbents not willing to open their networks, these companies can not reach the end users.

Regulatory Issues And "Smart Digging"

Municipalities, too, are going to play an important role in the deployment of broadband networks, in part by helping new broadband-oriented businesses to open and expand, and by encouraging the construction of an updated telecommunications infrastructure that enables new services aimed at consumers.

This has already occurred in some European cities during the past two years, including in Rotterdam, where 15 operators built fiber networks.

However, it is worth noting that in Rotterdam most of the fiber remains unused, because all of the new networks and the services that run on them have been aimed at the business market. To avoid the same problem in the developing FTTH markets worldwide, coordination among all the involved entities – from the municipality, to the network owner, to the developer – will be essential.

Also, in any community that is planning a municipal re-construction, with gas and water pipes being renewed, it is vital that the municipal government first construct a "master" plan for the development of a future-proofed open infrastructure network that can be accessed by multiple competing companies providing a variety of services.

Business Model Success

To-date, many broadband initiatives have failed in the marketplace because of high initial capital investment requirements, proprietary technologies or simply the hubris of the provider (seen in the common claim to be the only company offering an "end-to-end solution").

The key to market success will be a technology infrastructure that provides the greatest bandwidth for the least cost. An open infrastructure provides exactly that.

Traditionally, in new multi-dwelling constructions, three separate networks are built: one for telecommunications, one for data and one for cable TV. In the worst-case scenario, the construction of these three networks is managed by three different businesses, in coordination with the electrical contractor, resulting in the loss of time, money and space. And the costs do not stop there. Once installed, the three separate networks will require daily oversight and management, probably by separate support organizations with distinct legal, contractual and service level agreements. This will be required for each apartment.

With the open infrastructure model, the service providers are able to offer these services (telecom, data and TV) over the same physical broadband network, giving the customer maximum choice, and eliminating the number of separate legal, contractual and service agreements.

Thus, in the first business model with separate networks, if there are 10 service providers and 10 customers, there are 100 separate legal, contractual and other types of agreements, among the user, the service provider and the owners of the networks. With the open infrastructure model, only 20 agreements will be needed, because the connections will go through a single network owner.

The open infrastructure model is already at work in countries around the world – to the mutual benefits of property owners, network owners, municipalities and consumers alike. With FTTH in the mix, its adoption makes more sense than ever. ❖

Participants In The Value Chain

In the open infrastructure model, each participant in the value chain is able to focus on its own role:

- **Network owner** – The real estate owner is the owner or maintainer of the network. Network ownership includes financial control of the physical cable infrastructure and the active equipment. Real estate owners and construction companies invest in the network infrastructure in their buildings. Alternatively, the real estate owner or the communication operator may invest in the active equipment, depending on agreements covering how the network will be used.

- **Communication operator** - The communication operator provides the "last mile" link between the service provider and the end user, by administering and running the digital broadband network on behalf of the network owner. The communication operator provides support and maintenance for the network, but does not offer services to the end user. Abstaining from doing so will guarantee a non-competitive and independent relationship between the communication operator and the service providers.

- **Service provider** - A company that offers different functions on the broadband network, such as Internet access, telephony or TV services, to the end users. Service providers invest in research and development of services and features, which they offer directly to the end user.

- **End user** - The end user is the apartment owner, or tenant, who subscribes to and pays for the services. The end user sustains the business model by being the only source of revenue. However, the end user's willingness to pay is proportional to the freedom to choose their services from several service providers without being tied to contracts running for years.