It's the First Mile After All

By Steven S. Ross ■ *Editor-in-Chief*

Major telecommunications companies and the IEEE have been out-of-phase for years over a concept rather basic to our industry. The telcos have always called the gap between their high-speed trunks and consumers the "last mile."

From a telco point of view, that makes sense. Telcos usually expand bandwidth to consumers by bringing their fiber trunks ever closer. This makes the low-bandwidth bottleneck between the consumer and the network smaller and smaller as time goes on, until the last of it is closed with an Optical Network Terminal on the homeowner's wall.

The Institute of Electrical and Electronics Engineers, however, has long had a more consumer-centric point of view. Although the engineers who staff its standards-setting committees often work for the telcos, many also work for companies that sell tangible products directly to consumers in a competitive marketplace – Cisco/Linksys, Intel, HP and so forth. The shorthand name for IEEE 802.3ah, for instance, is EFM, for Ethernet in the First Mile. The 3ah standard makes it easier to control parts of the network close to the consumer.

It's the First Mile

This magazine has used both terms, in context. No longer. It is the First Mile after all.

In this issue, for instance, we take our annual close-up view of services to the MDU/MTU market. We also take note of the expansion of independent telcos into fiber networks. The independent telcos are, in the main, small operators with fewer than 20,000 customers. They also serve mainly single family units and small businesses in rural areas. What do those who serve multifamily dwelling units, multi-tenant office buildings and industrial parks, and SFUs have in common? And what does it mean to content providers, network operators and their common customers? Everything:

- They use the same network protocols, and that technology is Ethernet. Home and business networks (LANs) therefore merge seamlessly with their Metropolitan Area Networks (MANs).
- Their Ethernet networks deliver packets of information – voice, data, video and more – using TCP/IP, the Internet standard.
- Their networks are managed using web interfaces, again the Internet.
- The Internet allows customers to modify their services, order programming on demand, and put their own programming on the network, automatically.

The common standards are producing amazing price cuts. As the year ends, the average cost to pass a premise with fiber is dropping close to $1,000.

One Giant Network

There's also amazing flexibility. The new generation of media converters that has just started to appear bring fiber closer to customers. Media converters move a signal between copper or coax and fiber. My own DSL service's bandwidth just doubled because the fiber got closer. The converters can now be in pedestals at the curb, instead of climate-controlled central offices. Today's designs typically involve easily upgraded cards, sitting inside a common frame. Sound familiar? IBM moved PCs out of the kids' playroom and into the office more than 20 years ago by providing a way to upgrade the machine with a simple card swap – and started a revolution.

Even more significant in its effect on the bottom line, the need for truck rolls continues to fall thanks to the remote network management features build into Ethernet. That makes notoriously hard to service customers – college dorms, low-density "rural" areas, low-income MDUs – more attractive to operators.

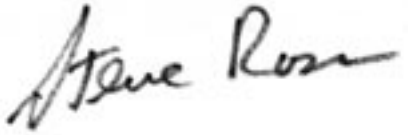
In short, media converters newly enabled with 802.3ah and other associated new technologies, not only bring more bandwidth to the consumer but also more choices. Need more bandwidth at the end of the term? As we note in this issue, students with Time-Warner Cable in Austin can use their computers and their credit card to buy it.

Thus, management of the network passes in part to the people who use it. Consumers will, as is their habit, come up with services and uses that their network providers and content providers have not thought to offer. It behooves those providers to watch what is going on, and to adjust their offerings accordingly.

Already, experience indicates that the standards are not quite robust enough, either. Their limitations are being met, as is customary in this industry, by vendors adding their own "extras." Some examples are discussed in this issue. The various (often incompatible) extras will be quickly standardized. That is, they will be quickly absorbed into new IEEE standards. Often, the upgrade involves little more than a software and (sometimes) firmware modification. It rarely involves ripping out installed hardware.

That, in turn, makes it easier for providers to attract investment and for municipalities to make a business case for building networks when private interests pass them by – again, enabling consumers. Even the ONT is being demystified. Within the next year or so, American consumers will be able to buy their own. Indoor models smaller than existing DSL and dialup modems showed up on trade show floors this month, with costs under $100 in quantity. That means $50 at CompUSA by Christmas 2006.

And by the way, the gap is already less than a mile, in most places. The First Foot is in sight. **BBP**



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