Key Lesson from the Top 100: Fiber is Easier

By Steven S. Ross ■ *Editor-in-Chief*

This issue's massive look at the industry's "best of the best" organizations – our annual Top 100 listing – offers us on the staff a unique overview of industry trends, triumphs, and shortcomings. The triumphs are many. The shortcomings are few. The year ahead looks bright.

It is vitally important that prospective network builders and investors understand what's going on in what, for many, is still an arcane and almost magic technology. On the triumph side, here are the issues pushing network builders to specifiy fiber as the low-risk option:

Triumphs

There are more than 500 companies in this industry now. Many are "technology vendors," producing the fiber itself, the electronics, and the software. But there are only two families of standards – ITU (BPON/GPON) and IEEE (point-to-point "active," and EPON/GePON). Within those families, the vendors' products are almost entirely interchangeable! And different families talk to one another, through Ethernet. Think of the mind-numbing thicket of standards in the RF video world, and you realize how amazing this is. Then think of the economies of scale that are driving costs down for deployment, maintenance, expansion, training, and repair.

Because it is all Ethernet, many vendors are offering great products for hybrid overbuilds – fiber to coax in the basement, fiber to power line. On the networks themselves, point-to-point infrared (free-space optics) and high-frequency systems (11 to 105 GHz) coexist nicely with fiber, and help make fiber networks practical in many settings.

Because it is all Ethernet, vendors can manage systems at several layers of the seven-layer network hierarchy – in layer 2 or layer 3, typically – again, using standard software and hardware tools.

Within the standards, many vendors offer terrific enhancements such as ONTs that can automatically sense whether they are on a BPON or GPON network, or whether wave division multiplexing is being used to increase the bandwidth. The telcos' SONET standard for metro-area and intercity networks is nicely accommodated. But because almost all the enhancements are "within the standards," the marketplace punishes those who try to carve out vicarious incompatibilities.

The equipment boxes – inside plant and outside plant – are terrific. There's lots of flexibility and lots of consideration for technicians' comfort. Fiber is ridiculously cheap, and getting cheaper every week. The first cost is lower than coax for new builds. The operating costs are lower. The reliability is higher (no power surges to knock out Ethernet cards, for example, because fiber doesn't conduct electricity; fewer electronic gadgets in the network overall; more remote network management and customer-initiated provisioning). The bandwidth is vastly higher.

The FTTH Council has become an increasingly important advocate for fiber to the home, helping to sway politicians and helping to serve as a gathering point for the industry. Fully two-thirds of our Top 100 are FTTH Council members, and we've flagged them in our listings.

Things that Need Work

If there's nobody to build fiber networks, the networks won't get built. When smaller developers, private cable operators, and independent telcos sit down to consider fiber, they often bump up against the lack of widespread contractor knowledge. Fiber is still magic to many of the people who have been dealing with the oddities of coax for a decade or more.

The major fiber vendors themselves have active training and contractor certification programs, of course. But they come into play only after the choice for fiber has been made.

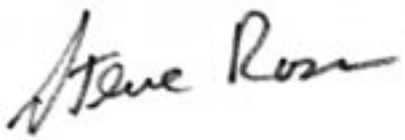
The process is quite different for the small developer who wants coax. The developer goes to a contractor who puts the stuff in. The contractor gets the materials from distributors and maybe a satellite TV purveyor.

Fiber is just beginning to head down that road. There are some independent training efforts (we'll be featuring one this fall) and there is a surge of interest among distributors (see our Top 10 Distributor listings in this issue for details). Architects are also beginning to think about fiber's requirements for equipment spaces in new construction – especially in MDUs – but architect sophistication has a long way to go in that regard. Common equipment spaces for fiber can be smaller than for copper, but in-unit requirements may be greater (see our article on Dedham Junction in the June issue).

Fiber technology for MDUs is still evolving. The FTTH business in North America has focused on hanging ONTs on outside walls. That's a problem for large apartment complexes. This is the year the issues get settled in the US.

Finally, as bizarre as it sounds, most building codes and most insurers require that emergency telephone services be delivered over copper, which is less reliable than fiber. Some incumbents use that requirement to refuse service to developers who want to install fiber, or even who want to use a PCO for phone service. Now that 9-1-1 service issues are being sorted out, that requirement is redundant, and redundancy costs everyone money.

We look forward to seeing literally thousands of companies in the fiber business next summer. Most of them, we believe, will be small contractors, specifying and installing standard, reliable fiber and buying parts from scores of distributors. The advance guard will be at our Summit in September. Fiber is easier.



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