



Cable and FTTH: Perfect Together

By Steven S. Ross ■ *Editor-in-Chief*

For the past four years we have, of course, been saying that only fiber to the home will provide the bandwidth and quality of service demanded by customers. For the past year we have detailed problems cable companies – particularly large franchise operators (MSOs) – have had even serving existing customers' bandwidth needs. Every major MSO has rationed at least upstream bandwidth,

We have also described some of the technologies cable companies have been using to close the gap between what customers want, and what current plant can deliver. There's DOCSIS 3.0 of course, and private cable operators and satellite providers' turn toward better MDU distribution schemes such as MFH3.

We reported on various cable experiments with FTTH, noting last October that we knew of at least six tests of RF Over Glass (RFOG) – all in greenfields. But we have also noted cable companies distributing video content over Ethernet-based networks – particularly open-access muni systems, and over amenity providers' greenfield nets in planned unit developments and MDUs.

But until late last fall, a return path for RFOG had not been stress-tested. RFOG was an incomplete image of existing DOCSIS 3.0 capabilities.

Now the picture is complete. It isn't quite as pretty as cable companies would like. Down the road, for instance, it cannot be expected to deliver the low latency of GPON or EPON (important for gamers and telepresence), or the raw bandwidth. And cable companies will have to invest substantial new sums on their backbone networks. RFOG is far less complicated in the field than coax – no active amplification electronics every 1,000 feet or so. But it is still more expensive to run than its Ethernet competition (new network servicing tests are still being released as we go to press), and RF does not carry quite as far as pure digital, even though it's all "really" digital inside the fiber.

What's more, RFOG equipment is more expensive than GPON or EPON, which has seen enough volume worldwide to drive down prices spectacularly.

Nevertheless, as we describe in detail this month, RFOG seems the best way in most situations for cable companies to move to FTTH because RFOG is basically DOCSIS with the DOCSIS node moved to individual subscribers' premises. Thus, cable companies can run RFOG and existing shared DOCSIS nodes together.

It isn't pretty and it isn't cheap, but it is pretty enough and cheap enough to keep cable competitive with telcos. And many, many equipment vendors and providers of network management software and test equipment have jumped into the field (see our Top 100 list and "Cable Industry Signals Move to FTTH" in this issue for a good sampling).

AND IN EUROPE

As this is written, I'm returning from a speaking and factfinding visit to Geneva. As we reported in our April coverage of the FTTH Europe conference, Switzerland's first municipality-wide FTTH network is just now being built. At the engineering school's innovation incubator (where I spoke to municipal officials, communications experts and investors), in conversations with UN staffers, and with a top accounting firm's senior personnel, the view about the Swiss situation was dire. The feeling was that headquarters personnel continue to be located in Zurich and Geneva – the two big Swiss financial centers – but that lower-level "back office" jobs are often elsewhere.

Bandwidth and cost of service are big reasons. The pattern has remained in place even as the Euro has risen in value faster than the Swiss Franc, making Switzerland a generally cheaper place to do business than the bordering Euro-Zone countries (France, Germany, Italy and Austria).

The angst is particularly strong in Geneva, where the French border closes in on three sides and cross-border commutes are almost the norm (Geneva itself has a population of only 200,000 while another 200,000 live in the mainly French suburbs).

The major local Internet and telecom company, Swisscom, came in for a great deal of scorn, and anecdotes of arrogant service and take-it-or-leave-it pricing abounded. As an American more used to hearing anecdotes about poor service in France, the turnabout was a bit startling although ironically, Swisscom is the major provider in nearby French towns as well. It's clearly costing Switzerland economic growth.

I personally felt cheated by Swisscom's overall charges, and about the pricing plans available. In Switzerland, 30 minutes of hotel connect time costs 5 Swiss francs (about \$5) and must be used all at once. Four hours cost 19 CHF, and also must be used all at once. In France, my charge with Swisscom (was 8 euros (about \$13) for 60 minutes. The time could be taken over multiple logins, but was not transferable to the airport WiFi network a kilometer away.

Exchange rates are distorted now – the dollar is worth less than it should be in terms of purchasing power. The taxes in Switzerland are low – under 8 percent – and in France they are more than double. But even with that correction, the price would have been \$8/hour in Switzerland and \$9/hour in this competition-free corner of France.

Swiss business interests are just awakening and planning fiber overbuilds. I doubt Swisscom will be able to get away with current practices in a year or two.

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