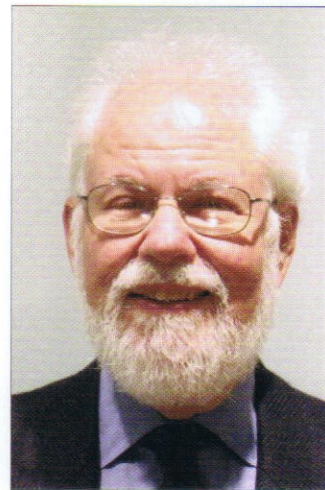


Every Story

Dave Says: Telcos Are Turning a Disadvantage into an Advantage



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A broadband industry pioneer, Dave has worked on residential broadband for nearly 20 years. In the 1990s he directed several of the earliest residential cable modem trials, and later helped MSOs plan and deploy broadband services. When Dave is not busy consulting for clients or co-writing the Report on the Broadband Home, he tests new broadband-related products and maintains the multiple Web sites he's created.

When telcos started deploying triple-play services, they suffered from a significant disadvantage:

their point-to-point architecture makes it difficult to manage devices in the home. Cable's architecture has always been based on broadband coaxial cable running to and throughout the home. Cable-provided digital devices all have IP addresses so they can communicate over the WAN directly with servers at the headend. Cable operators can use well-established network management tools to manage each device directly from the broadband connection.

By contrast, telco architecture is based on a point-to-point link running directly from the telephone central office to the home. There's a single access connection outside the house — twisted-pair or fiber — and then several twisted-pairs connected to phone jacks throughout the home. This existing twisted-pair infrastructure works well for data service — telcos use it to connect the DSL modem. To reach remote PCs, they use a router with HomePNA (a data-over-phone line technology) over the same twisted-pair. (They also use Wi-Fi to reach portable PCs.)

This existing twisted-pair infrastructure doesn't work well for IPTV. TV sets are installed next to coax outlets, not phone jacks. Twisted-pair can't reliably carry multiple channels of HDTV. Telcos don't want to run Category 5 cabling all over the house, so they typically take over the existing coaxial cabling and use a data-over-coax technology (MoCA or HomePNA 3.x) to carry digital video streams from the broadband router to the set-tops.

Seeing the need to manage the evolving triple-play home infrastructure, the DSL Forum (whose members include all of the world's telcos) devised a comprehensive protocol suite for remote management of CPE devices. These include configuration and provisioning, firmware upgrades, status and protocol monitoring, and diagnostics for all the devices



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in the home.

The CPE WAN management protocol (CWMP, also known as Technical Report 069 or TR-069) specifies the application layer protocol for communications between a remote management server (the auto-configuration server or ACS) and the home devices. Other protocols are specific to each device type — for example, TR-135 provides the “data model” for digital set-top boxes.

TR-069 was first published in 2004 and has spawned a global industry providing TR-069-enabled devices, CPE firmware, ACS systems, test tools and testing services. Most telcos now require TR-069 support in every device they purchase. Telcos have deployed ACSs and started using CWMP to manage their

remote networks.

The telcos aspire to manage all networked devices in the home — not just the ones they install. They're talking with the consumer electronics industry about including TR-069 support into all networked devices, such as digital TV sets. This would enable the telcos to diagnose faults when consumers add these devices to their home networks, and provide firmware updates and diagnostic support for these increasingly complex devices.

The telcos believe that taking responsibility for remote management of the networked home will provide them with a competitive advantage as more and more devices are networked. They have used TR-069 to turn their initial architectural disadvantage into an advantage.

Although TR-069 comes from the DSL Forum, the protocol suite isn't locked to any particular form of broadband access. The WiMAX Forum and the Femtocell Forum have adopted TR-069 for their remote management. It will be included in G.hn, the current ITU initiative to provide a single standard for communications over all existing home wiring. TR-069 is fast becoming the global standard for remote management of triple-play services.