

Proposed article for Broadband Library – Summer 2008 Issue
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Cable Telephony – The Burden of Success

In the last quarter century, telephony over Cable Networks has developed from non-existent to sophisticated and very widely deployed.

Twenty-Five years ago, I do not think any cable systems, other than those connected with rural wire-line telephone companies, were selling any voice services at all. At that time, I was a Staff Engineer with a cable system in Montgomery County, MD. The system had many unique features including off-premises converters, amplifier status monitoring on an Apple II computer, and one of the industry's first FM-Video fiber optic links. In addition to typical cable engineering functions, I managed the company's PBX (Private Branch Exchange), and this was where I first learned about Business Telephony.

At that system, we always thought that we should try to keep as much telecommunications as possible on our own facilities (still a good goal, by the way). Using a "Cable Phone" Modem, we attempted to provide voice dial tone from our company PBX to a "Cable Store" a couple of miles away. These early modems used analog carriers over the cable spectrum, forward and return. Signaling was accomplished by detection of the RF carriers going on and off – an off-hook detection at the store would turn its modem's carrier ON, which would be detected at the office and would then close the loop to the PBX. In the other direction, when the PBX wanted to ring the extension, the office modem would turn ON its carrier, and when the store modem detected it, would ring the phone in the store until it went off-hook. Because noise could cause false carrier detections, and because the carriers might not be detected at all if the RF level decreased, *no dial tone* and random ringing events abounded. Eventually, we purchased a Business Line from the Local Bell System to keep in touch with the store.

A little later, we tried an early T1 over RF connection via a nine-mile coaxial cable super trunk between a warehouse/office and headquarters. This link used digital channel banks at each end and an early single-channel programmable T1 modem. We were quite impressed that we could feed more than 12 extensions at the remote office, as well as what was then considered a *high-speed* data channel operating at 19.2 kb/s. Because the facility was digital and operated over a dedicated super trunk, it worked considerably better than the "Cable Phones", but still experienced its share of problems. It seemed that coaxial cable RF was not the best medium for reliable voice communications. Years later, the arrival of HFC (Hybrid Fiber Coax), DOCSIS, and PacketCable changed everything!

As recently as five years ago, after the Cable industry had a few years of experience in circuit-switched phone deployment, if you asked any Cable Executive what share of the Residential Voice market Cable would command in five years, I doubt any prediction would have exceeded 30%. Today, with widespread PacketCable deployment, Residential Cable Voice has been so successful that, in some areas, it is now the *leading*

provider of landline telephone services – that is to say, Cable has the highest number of access lines among all providers in a particular city or neighborhood, including ILEC (Incumbent Local Exchange Carrier) lines.

In the first column I penned for Broadband Library in the Spring 2007 issue, I mentioned that my background never included any time at a “telephone company”. Now, it seems, the “telephone company” has come to me!

What does it mean to hold a majority line count in Residential Voice Service? It means increased competition, for one thing. Telephone companies are not sitting idly by watching their customers move to cable voice service. They are entering the video delivery business, offering bundled product lines and attempting to win customers across Cable’s full suite of services. We must take these well-funded competitors seriously. Cable continues to maintain some distinct advantages in the marketplace. Our high-quality services provide better value and are available across our entire service area, not just in selected markets or areas. We already have a strong multi-product relationship with our customers, and are well positioned to react quickly to changes that may develop as this competitive battle continues to unfold.

Leadership also brings increased responsibility. Our network is available all the time; with standby power that is adequately maintained and monitored; with redundant switches and trunking gateways; with multiple routes to the PSTN (Public Switch Telephone Network) and Peering Partners; and with all the OSS (Operational Support Systems) tools to measure our performance and ensure that we are meeting our customer’s expectations.

As we succeed in the residential market with our triple-play products, recent experiences show that there is significant opportunity for growth into business markets.

Why is there such opportunity in the Business Line area? Many personal cell phones are replacing residential lines. To the younger generation (under 24 years old), the Cell Phone Company is the primary voice provider¹. Business lines, on the other hand, are quite a different story. A business line that faces retail customers is by nature tied to a fixed address, even if it eventually forwards to a particular worker on a cell phone. Let us look a little closer.

With a small retail business, such as a dry cleaner or delicatessen, customers must call an advertised number to reach a brick-and-mortar location. Standard lines go to a fixed phone at the business site, answered by the workers on duty. These small businesses are already demonstrating that they are interested in Cable Business Services delivered over DOCSIS / PacketCable facilities.

Small businesses based in home offices could conduct their affairs by cell phone, but will require the enhancements that a fixed switch can provide, such as voice mail/e-mail

¹ “The Cell Phone Challenge to Survey Research”, Pew Research Center 5-15-2006 ,
“The Birth of a Cellular Nation”, MediaMark Research, Inc. 9-17-2007

integration, remote office operation via the Web, etc. Cable can do this too, and can offer SIP-based (Session Initiation Protocol) services along with plenty of new features.

Larger businesses that have PBX or Key Systems installed are not going to be moving their trunks to Wireless. While each employee may have a wireless phone on their belt or in their pocket, calls to them should pass through the Enterprise phone system first. SIP trunking and IP Centrex services are capable of providing what they require, and again Cable is ready.

Although these all offer positive opportunities for Cable, some challenges remain. “Over the top” providers can deliver similar services, and use Cable’s infrastructure to do it. We will continue to differentiate our services from theirs, however, by taking advantage of our local presence, superior support and assets. As I have written in prior columns, our field force is something unmatched by the competition, and Local Customer Service is a great differentiator. Our multimedia presence in the majority of homes is a great marketing opportunity as well.

Twenty-five years ago, residential and business customers demanded reliable and affordable voice services from their provider. Although the number of providers has increased, and the delivery platforms used to provide voice services have multiplied, those requirements have not changed. Technological innovation has provided our industry with increased opportunity. Who knows what we may be offering twenty-five years from now?