

Achieving Low-Cost, Carrier-Class Triple Play Deployment

APPLICATION NOTE



THE CHALLENGE

Bundling the “triple play” of voice, data, and video services is becoming an increasing imperative for wireline carriers. The potential for growing revenue per subscriber, reducing churn, and protecting against competitive threats all suggest that adding video is a natural step in network evolution.

However, existing fixed networks face challenges in meeting the high-bandwidth requirements of video services. Access node carrier serving areas (CSAs) are designed primarily to deliver POTS services to subscribers that may be located up to 12kft to 15kft from the access node or remote terminal (RT). Yet in these copper loops, delivering a minimum bandwidth of 15Mb/s to each subscriber for the triple play bundle requires shortening the distance between subscriber and access node to about 5kft, a range known as the Video Serving Area (VSA). Many DSL subscribers today—all prime targets for the triple play bundle—are simply too far away from the access node in the existing CSA.

Several traditional methods to solve the problem exist. New broadband DLCs or DSLAMs installed in remote terminals can be deployed so that subscribers are within 5kft of the remote. With new right-of-way access, a concrete pad, a new cabinet, new electronics and local power, first costs can easily range from \$50K to \$100K per site before the first subscriber is turned up. It is not uncommon for the process of permissions, planning, logistics, and deployment to take weeks

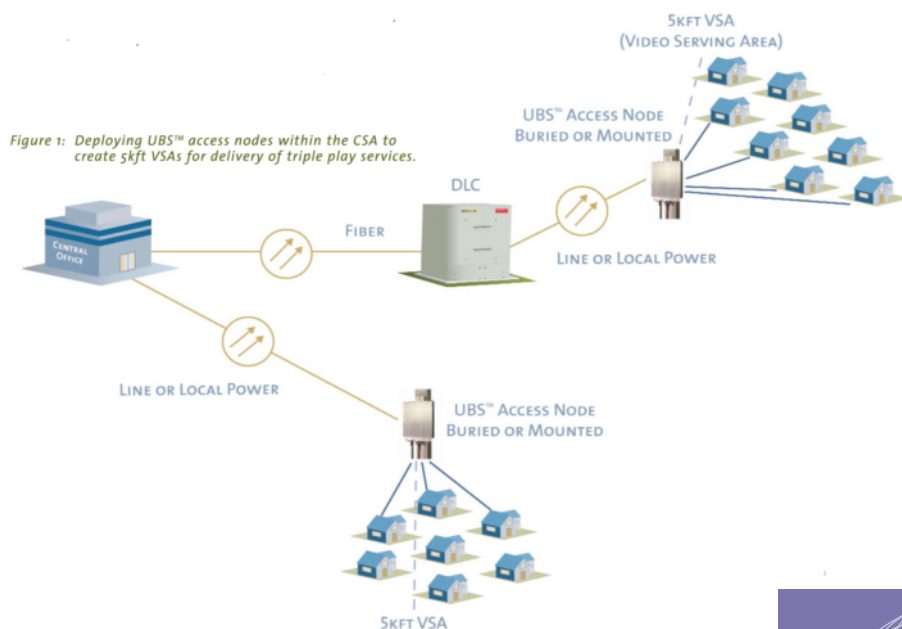
or even months before customers can be connected to the new facilities.


Even for those subscribers who are already within 5kft of an access node, the embedded systems may not be able to support the triple play due to bandwidth limitations or technological deficits. Upgrading equipment by adding cards or bolting on new backplanes, or pulling old equipment and installing entirely new equipment on the pad, can easily cost from \$30k to \$70K for an upgrade and, again, as much as \$100K per site for replacement. Though potentially less complex than a completely new installation, upgrading an existing access node may encounter similar planning and logistical challenges.

Though much promise has been attributed recently to PON-based fiber-to-the-premise (FTTP) solutions, the up-front capital investment required is significant. Furthermore, as much as 3/4 of the capital spent on infrastructure may be associated with the last-mile fiber connection to each subscriber. Most feasibility studies indicate that FTTP is not a financially attractive solution in areas where a copper network is already installed. In many cases a hybrid fiber-copper solution may be more attractive, even in greenfield deployments.

THE SOLUTION

The Universal Broadband Server (UBS™) from UTStarcom offers a fresh and compelling alternative for conquering the





distance limitations to deliver the triple play. The UBS is a standards-compliant, compact DSL access node that works in conjunction with existing infrastructures and fully enables triple play services at a fraction of the cost of a DLC or RT installation.

The carrier can essentially sub-divide existing CSAs into smaller Video Serving Areas, or VSAs, as shown in Figure 1. Compared with the CSA serving radius of 12kft to 15kft, the VSA serving radius is only approximately 5kft. The UBS serves as the access node electronics for each VSA. As shown in Figure 1, each UBS connects to the CO or the DLC in the CSA by fiber optic cable, serving the subscribers within the 5kft radius over the existing copper facilities. Traffic from subscribers is aggregated within the UBS, each of which is designed to support up to 24 or 48 broadband subscriber connections, and backhauled to the CO. Each fiber-fed UBS supports multi-megabit speeds downstream and upstream using ADSL2+ and VDSL2 technology, which is more than adequate to support the triple play's suite of multiple high definition and standard definition video streams, high-speed Internet access, and POTS for each premise.

This carrier-class solution includes remote management and other software features such as IGMP multicasting and QoS support that enables triple play services and does so at a fraction of the cost of DLC-based or RT-based solutions.

DEPLOY WITH LESS CAPITAL INVESTMENT

From a capital perspective, UBS is much less expensive to implement than DLC or RT solutions. The UBS is self-contained in a watertight and environmentally hardened case, allowing deployment in and around unconditioned cabinets or pedestals, in manholes, mounted on poles, or buried underground. By exceeding GR-487 specifications, it can be deployed without an expensive construction project and, given its small size and mounting flexibility, offers the added benefit of being relatively unobtrusive in neighborhoods.

In addition, the UBS can be line powered over available copper pairs from the CO or an RT. This eliminates the expensive and time-consuming task of supplying local power and battery back-up to the unit in a remote location. With the available line powering option, the UBS can be located anywhere in the network, including in passive cross-connect

cabinets at the Serving Area Interface (SAI).

With shortened deployment intervals and an appreciably lower up-front cost, a UBS-supported installation can both significantly reduce the time to revenue for new broadband subscribers and improve the carrier's return on initial investment.

ENABLE REDUCED OPERATING COSTS

The UBS is designed for efficient operation by pre-provisioning all connected subscribers for service and effectively eliminating truck rolls for activations. At installation, the UBS can be spliced into all active POTS connections, allowing orders for DSL, voice and video to be remotely configured through a variety of manual and automated methods.

The UBS offers a wide range of options for provisioning and management. In addition to a command line interface, the system offers native support of TL1 and SNMP protocols. UTStarcom also offers the UBSView™ Element Management System (EMS), which can simplify and even automate daily operations and administration functions. Finally, the UBS can communicate with third-party OSSs, either directly or via the UBSView, to support flow-through management and administration of a network of UBSs.

UTSTARCOM MAKES TRIPLE PLAY ACCESSIBLE

By shortening the distance between subscribers and access nodes to 5kft and making use of the existing copper plant, the Video Serving Area (VSA) concept offers the quickest and lowest-cost solution for connecting today's subscribers to the triple play, of IP voice, video and broadband Internet access. Carriers can implement VSAs by deploying UTStarcom's fiber-fed Universal Broadband Servers (UBSs), which offer a flexible, cost-effective, and quick-response alternative to traditional remote terminal-based approaches to broadband access.



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About UTStarcom

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