

“The OPEX Conundrum—How the Last-Mile of Broadband Entices and Chases Away Profit”

Make no mistake, but profitable broadband service is on the mind of every network provider these days. Pummeled by declining price points and a formidable war being waged by cable MSOs, digital subscriber loop (DSL) carriers are angling every advantage toward sustaining network quality on razor-thin margins. And at a time when broadband demand continues to flourish, the challenge of ensuring profitable service creation alongside subscriber satisfaction poses a hurdle for many networks bogged down by beleaguering installation and maintenance woes.

Namely the OPEX (operational expenditure) function stands at risk for taking down the entire profit potential when the service provisioning costs outweigh the ERR (expected revenue realization) value per subscriber. ERR introduces a method for factoring the length of service as an annuity and the recognizable revenue over the life of the service. If the ERR value exceeds the marginal cost of creating the broadband service, then the network provider wins handsomely. However, as most carriers have learned through trial and error (not ERR), the provisioning and subsequent maintenance costs can quickly outpace the incremental revenue advantages found with supplying broadband connectivity. Hence, the last-mile risks become more obvious—especially as technician visits and cable maintenance instances soar.

SBC was one of the more prominent carriers to curtail and ratify their provisioning policy for DSL service following a stay of execution for remote terminal access under a project dubbed ‘Pronto’. Prior to reeling in the acceptable loop length for new subscribers to a modest 12,000 feet, the service provider became increasingly aware of the service discontinuities and amplified repair orders that cropped up beyond this line of demarcation. In fact, the problems saturated many central office sites with an unfair share of technician visits and service attenuation readings that floated far above acceptable line quality. The end result forced SBC to halt further service orders to customers who might otherwise have assumed eligibility based on previous qualifications and the fact that their neighbor was already subscribed to the DSL network. Embittered customers and a hemorrhaging carrier shouldn’t lead the path to successful future.

But setting aside the given demand for service growth, why can’t broadband networks expand the customer loop while maintaining reasonable profitability? Actually, they can.

Looking inside to create change

While many financial planning groups and network managers continue to focus on the capital intensity of investments in acquiring new infrastructure, many have begun to step back and examine how these assets may actually be costing their bottom line more in terms of maintenance and operational repairs. Metro transport networks and the fiber railroad, once in their heyday of deployment, realized a higher-than-expected number of mechanical splices and tuning requirements to make these high-speed links function properly. Diligent maintenance and supplemental sparing of parts keep these networks flying along but not without the often manual intervention of support teams in place. And while cost-cutting measures are being implemented to reduce labor pools, the uptime contingency is

dealt a painful sting as a gap emerges between service demands and the economic realities associated with delivery. In real time, profit is eroding as a direct effect of the OPEX burden.

Winning the war against such leakage begins with intelligent provisioning at the time of subscriber enrollment. Unfortunately, many of the DSL and new broadband service providers have yet to master the concept of knowing precisely which subscribers are feasible and those that rest beyond the limits of reasonable service generation. And that is where provisioning intelligence earns a marked improvement in the upfront loop qualification process and by enabling the service provider to recognize how its constraints impact the bottom-line. Service providers that have stayed a strong investment in OSS applications realize the integration value of loop modeling and the predictive quality of determining how a particular subscriber contributes to an OPEX hurdle. Whether the fault lies in signal attenuation or specific circuit tolerances in the service area, the intelligence that occurs at the point of a new request will include or exclude the right subscribers—and lower unnecessary maintenance and repair issues as a byproduct of selective provisioning.

A secondary step in the infusion of profitable networks involves an assessment of the total network infrastructure—not just in the loop from the central office, but rather the physical wiring conditions that exist beyond the DSLAM or inside the customer premises. Our empirical study of one service provider's network data revealed an alarmingly high observation of failure tags associated with the breakdown of cabling and wiring conditions at the edge—or last point of termination. Given the smattering of copper health that is present throughout urban and rural networks, it is of little surprise that a barrier to effective DSL penetration exists outside the provider's control or immediately adjacent to the service junction. Recent propagation of devices and voice equipment that interfere with broadband signaling and line quality has exacerbated the problem even further—forcing some providers to raise the charges of premise visits to cover identification of these faults alone.

But part of these network infrastructure snafus can be resolved quickly and with lesser investment on the carrier's end by way of advanced wireless solutions. Since the last mile remains cloudy to some network elements, network providers can take advantage of wireless as an alternative to the more risky proposition of guessing the state of a targeted subscriber market. One such solutions developer, SOMA Networks (San Francisco, CA), applies a combination of wireless gear and customer premise equipment that effectively eliminates the woes of traditional DSL rollout by moving the provisioning intelligence upstream and establishing a service-ready state within an untapped spectrum. Leveling the physical subscriber environment is not an easy task, but one that snares consistency of operating costs and quality of service generation. And not to be forgotten, network providers that achieve a sense of “edge nirvana” can finally begin to harvest the incremental revenue streams from applications that come part and parcel with IP transport.

Forward thinking service providers embrace the aspect of marginal revenue productivity (MRP) to raise their overall ERR values, but many still toy with applications at the edge—due largely to factors of reliability and continuity testing. But as VoIP and video content gain speed with broadband networks, namely consumer-grade DSL, the challenge becomes finding a way to lower OPEX costs while steadily evolving the loop's capacity to handle bandwidth-intense applications. By setting in motion a review of provisioning intelligence and accurately seeing the

last mile of subscriber networks, carriers have a real chance at making DSL and other broadband technologies work in their favor. And this translates directly to the long-run economic profits needed to forge next generation service delivery.

Back to the basics

Make or break situations are difficult to face for an industry—and telecom certainly has gained the spotlight for now. But given the fact that average demand for broadband services exceeds provisioning capacity in 74.2% of domestic urban markets, this implies that network providers has an overwhelming opportunity to harvest a bright future of profitability—that is, if they act wisely. That means that three out of four markets for DSL are currently being underserved or completely without service to a growing contingency of subscribers. It is fundamentally flawed to think that one next door neighbor can order DSL service while the other can not. Is this a case of misinformation, poor capacity planning, or the lack of strategic investment—or all of the above?

Solving the last mile equation of predictable service costs and satisfying demand for IP networks shouldn't be too mystifying at this stage of mass deployment. But for whatever strange reason, the carrier world keeps missing the point: profitable networks end with the lowest cost of ownership. If copper plant produced insane costs of maintenance for voice calls, do you think that an alternative would be sought after to lower the sinkhole effect? Probably. So, why isn't the same true for broadband? The answer is already in front of us—right there inside the network looking outside the service provider's window.