

Broadband Applications Fueling Consumer Demand

Assessment of Market Drivers and Opportunities

Telcos have a narrow window of opportunity in which to exploit their interactive strengths against competitors. Technical advancements have converged with consumer demand to provide meaningful broadband applications consumers are both willing to pay for and stay for.

What will it take for telcos to win the broadband war and secure new revenue streams? Four emerging broadband applications provide incumbent telcos with renewed prospects to retain valued customers: video, gaming, home networking, and audio on demand.

Focus: North America



Abstract

In an increasingly competitive telecommunications market where the only certainty for incumbent telephone providers appears to be continued access-line loss and average revenue per customer (ARPU) erosion, broadband services and applications provide a beacon of hope for stagnating carriers. However, the battleground for broadband services is, by many comparisons, more intense than that found in voice markets. Cable multiple system operators (MSOs) currently dominate their telco digital subscriber line (DSL) competitors nearly 2:1 in U.S. market share. Incumbent telcos marketing DSL are fighting back, offering lower prices, service bundles, and enhanced products such as Wi-Fi, in an attempt to reverse their inferior position in the broadband market.

It will take more than price reductions to win the broadband war and secure new revenue streams. Emerging broadband applications provide incumbent telcos with renewed prospects to retain valued customers and increase ARPU. This paper assesses four of the most popular applications — video, gaming, home networking, and audio on demand — and provides market characteristics and opportunities that will catalyze future broadband adoption and produce additional weapons in the telcos' arsenal against cable.



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Video

Market Characteristics

Although video is a key component in the triple-play bundle, one might question whether the video hype in recent months is just a fad or if this application can in fact redefine the telcos' position in the broadband market. For several reasons, just a few of which are mentioned later, the prevailing question no longer appears to be "if" telcos should introduce video in their portfolios, but "when" and "how" to do so.

Triple-play bundles are proven to reduce churn and can reverse ARPU declines

According to Yankee Group, 30 percent of all U.S. households indicate a strong or moderate preference for interacting with a single supplier for voice, video, and data needs. When examining high-value customers, such as digital cable or broadband households, preference scores exceed 40 percent. Cox Communications, the most aggressive MSO to date in deploying triple-play bundles, reports churn rates are decreased as much as 50 percent among customers who select a triple-play bundle, compared to their single-product subscriber counterparts. Furthermore, UBS Warburg estimates the monthly ARPU for Cox bundled subscribers to be \$130, more than twice the average monthly cable ARPU of \$62.

Video addresses imminent cable threat to core voice revenues

It is reasonable to expect MSOs to accelerate voice deployments for several reasons. First, cable's two-way functionality is a competitive differentiator against direct broadcast satellite (DBS) in the multichannel video provider distribution (MVPD) market. As such, both voice and high-speed Internet services will remain critical services offered by cable. Furthermore, given aggressive efforts of several regional Bell operating companies (RBOCs) in lowering DSL prices, and in some instances aligning with DBS providers, MSOs have even greater reason to launch an offensive assault on the voice front.

Accordingly, all of the major MSOs are currently active in the voice market. Cable telephony is approaching 2.5 million customers, primarily at the expense of telco second-line gains.

- > Cablevision recently unveiled plans to launch voice over IP (VoIP) services to 4.4 million cable customers in the New York tristate region before the end of the year. The MSO

will price an "all-you-can-eat" voice package for \$34.95 offered exclusively with its Optimum Online service — a monthly discount of \$5–\$10 below incumbent Verizon's similar bundle.

- > Comcast has announced plans to continue voice trials in its Philadelphia, Boston, and Minneapolis markets. The largest MSO recently sold its ownership stake in QVC network to Liberty Media for \$7.9B — an ample war chest to fund further voice rollouts — although the MSO has publicly indicated it will proceed cautiously with future trials and rollouts.
- > Time Warner activated more than 2,000 voice customers in its Portland, Maine, trial and has announced future trial plans in Rochester and the Carolinas.
- > Cox remains committed to voice deployments, recently announcing its two million milestone of bundled customers — that is, subscribers who have purchased at least two of three services — an impressive penetration rate for a carrier with a base of 6.5 million basic-service customers.

One of VoIP's big advantages is cost relative to circuit switched. The advantage becomes even more pronounced in a non-powered network. MSOs that choose a nonpowered voice solution stand to save up to 40 percent in capital expenses relative to powered architectures. Not surprisingly, several of the aforementioned MSOs are trialing or launching nonpowered solutions. Both Cablevision and Time Warner indicate that, in such trials, power backup has not been a significant concern to consumers. This claim is quite credible in urban markets, which tend to have fairly stable power grids. In fact, Time Warner reports that the network uptime in its Portland trial was 99.7 percent, a stone's throw from the 99.999 percent reliability of the traditional telephone network and an improvement over wireless's 95 percent reliability. Additionally, location-based services will provide for E-911 tracking capability on wireless phones — giving a highly penetrated wireless base an emergency alternative in the event of power failure. This poses another threat to telcos attempting to charge a premium for the reliability benefit and more disconcerting, offers another opportunity for MSOs to enter the voice market with a nonpowered solution.

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Consumer appetite for video-oriented entertainment is on the rise

The average household currently consumes seven hours of television programming per day. Individual television consumption is up 10 percent over the past five years, topping 4.5 hours per day in 2002. Not only are individuals consuming more video entertainment, but also the price sensitivity for these services does not appear as elastic as that for traditional telephony services, as evidenced by increasing cable prices that have topped the rate of inflation more than threefold in the past few years. While it is true that MSOs have suffered market-share losses to DBS players offering more attractive packages on a price-per-channel basis, the relative ARPU for MVPD providers has been sustained, with MSOs generating 60 percent higher ARPU than their local telephone peers.

Enablers and Opportunities

Although telco video has been “just around the corner” for many years, a number of recent technical advancements make the opportunity realistic today. First, compression improvements, such as MPEG-2 now allow for streamed video in the 2.5–3.5 Mbps range — within DSL capability. The MPEG-4 compression standard, expected to be widely available in the next 12–18 months, provides video compression at or under 1 Mbps — very complementary with today’s asymmetric DSL (ADSL) loops. Middleware provides the capability to deliver user authentication, content management, interactive program guide, and billing functionality to a DSL carrier interested in pursuing a video-on-demand (VoD) solution.

Although it is technically feasible to deliver IP video with these developments, telcos face the challenge of sourcing relevant content from producers. Several of the RBOCs — SBC, BellSouth and Qwest — have recently teamed up with DBS providers to enter the video space. Alternatively, telcos may partner with an on-line content aggregator, such as Movielink and CinemaNow, to stream movies-on-demand overdeployed DSL connections.

The greatest challenge facing a telco attempting to offer video may be more cultural, rather than technical, in nature. Many telcos, specifically the large RBOCs, must address the needs of a unionized workforce when considering such an endeavor. Depending upon existing union contracts, some telcos may be disadvantaged in determining how to enter the video landscape with minimal disruption to the workforce while still maximizing speed-to-market.

Gaming Market Characteristics

Gaming has arrived in the mainstream market. According to the Entertainment Software Association, 50 percent of Americans aged 6 and older play video games. The average gamer is now 29 years old and 43 percent of gamers are women. The total gaming market, including hardware, software, and accessories, rivals gross revenues collected at the box office, topping \$9 billion in 2001. The average American has nearly doubled his or her video game consumption in the past five years. The gaming segment is a mainstream, diversified audience.

Broadband gaming will be catalyzed by penetration of on-line gaming consoles, such as the Playstation and the X-Box. Yankee Group estimates that on-line console households will reach critical mass penetration in the next five years. By 2005, almost two-thirds of on-line gamers will be console-based. Such adoption creates an application that is fast becoming a social affair. In households with gaming consoles, two people typically play games regularly, with 42 percent of gamers reporting they participate in games because they enjoy playing with friends and family.

In a report recently released by market researcher IDC, the firm estimates the market for downloadable games to climb from \$52.7 million in 2003 to more than \$760 million in 2007. The projections are based on the mainstream audience gaming now attracts through multiple genres — from more intense classifications such as strategy or shooter varieties to more casual categories like poker or checkers.

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Enablers and Opportunities

The social effect of gaming creates a marketing opportunity that appeals to an individual's sense of belonging to a wider community. As has been seen in the massively multiplayer on-line role-playing genre, not only do these communities establish a very loyal following — with the average Everquest gamer dedicating 20 hours a week to on-line play — they also provide a price-insensitive audience among more serious gamers. As a result, DSL providers have an opportunity to increase revenue and retention with specialized gaming packages that offer higher upstream bandwidth to address latency concerns and differentiate against cable modem packages.

Additionally, DSL operators may generate additional revenue through content partnerships. By providing the billing and customer interface, service providers have an opportunity to resell said content to existing subscribers and new prospects. Content providers benefit from the service provider's sales and advertising efforts. Finally, customers benefit through a single interface for billing and customer support.

To further improve the value proposition, DSL providers may also choose to offer popular gaming content near the network edge and make it available to customers through a portal interface. This model adds value to the service provider portal, essential to ensuring the provider's brand is associated with the customer's on-line experience. Such a model also improves the gamer experience for games requiring minimal latency. Not only does a service provider have the opportunity to generate additional customer revenue through this example, but it may also have the potential to generate advertising revenues from content providers interested in gaining subscribers.

Finally, telcos may partner directly with console manufacturers, such as Sony and Microsoft, to deliver compelling promotions to attract broadband prospects. This approach would be particularly effective during the holidays, when seasonality favors both product categories. Regardless of whether such a marketing venture is pursued, a telco must weigh the costs of providing technical support for these customers against the potential churn if such issues go unresolved.

Home Networking

Market Characteristics

Home networking penetration is on a healthy growth trajectory, largely stimulated by households sharing a broadband connection between multiple computers and peripheral devices. It is estimated that 25 percent of U.S. households currently have multiple personal computers (PCs), with penetration expected to top 50 percent in the next five to seven years. It is further projected that 54 percent of on-line households will have home networks in place by 2008. Adoption rates are expected to increase as the consumer's use of home computing power evolves from desktop PC applications to entertainment. Yankee Group estimates media nodes will penetrate 18.5 million households by 2007, serving as a further stimulus to home networking adoption. Among PC households, 57 percent and 65 percent indicate a strong or moderate interest in home networking for audio or video sharing, respectively.

Beyond multi-PC households and the proliferation of media nodes, additional segments and applications will fuel home networking growth. Today, nearly 32 million people currently work from a home office and 66 percent of all workers bring work home at least once a week. For this segment, productivity is of paramount importance and a home network allows a time-constrained consumer the opportunity to maximize the benefits of a broadband connection. Additionally, penetration of on-line gaming console devices will fuel demand for home networking. Finally, wireless home networking (e.g., Wi-Fi) will catalyze the market by simplifying the user experience, appealing to a new range of middle-market customers.

Enablers and Opportunities

Many of the large incumbent telcos have an opportunity to leverage their wireless expertise in penetrating the wireless home networking market. This capability serves as a competitive differentiator in many cases against MSOs that do not offer a similar value proposition. Additionally, service providers have an opportunity to increase revenues by negotiating teleworking packages for their enterprise customers. The International Telework Association and Council (ITAC) reports that 35 percent of broadband teleworkers have the service paid for by their employers. Additionally, the organization reports that broadband can potentially save a company

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more than \$5,000 per teleworker, related to increased productivity and reduced real-estate costs. Given the strong enterprise relationships already established by the telco and yet to be duplicated by MSOs, telcos have a unique opportunity to offer remote worker packages through business customers interested in improving productivity, employee satisfaction, and bottom-line results.

While the opportunity remains to capture the enterprise segment in support of broadband teleworking, the service provider must address security concerns inherent with such an approach. In a study conducted by the Economist Intelligence Unit, senior executives expressed a concern in providing sufficient security for remote workers. This inhibitor offers an opportunity to service providers able to offer virtual private networks (VPNs) to overcome this sales barrier.

Security remains a critical concern among average consumers as well. According to the Pew Internet Project, 25 percent of Internet users have been affected by computer viruses, mostly infiltrated through e-mail. Additionally, 92 percent of Americans cite they are concerned with child pornography on the Internet. Finally, more than half of current broadband users have installed a computer firewall to protect against electronic intrusions. With these security-related concerns relevant to existing and potential broadband subscribers, the service provider has an opportunity to offer such security-related enhancements to its portal to drive revenue and increase retention. Furthermore, such efforts can unite improved Internet security with the additional protection provided through DSLs dedicated last-mile connection, as compared to the shared access inherent in coaxial networks.

Streaming Audio/Audio on Demand Market Characteristics

According to Arbitron/Edison Media Research, approximately 103 million Americans have at one time streamed content over the Internet. Penetration growth rates for streaming audio have tripled in the past three years and approximately 26 percent of the on-line population are regular monthly “streamies.” Streamies are an important segment for service providers, as they tend to be more educated and have higher incomes than their non-streamie counterparts. Furthermore,

streamies spend nearly 50 percent more time on-line, with broadband households being nearly twice as likely than their dial-up peers to stream content in a given month.

Though the popularity of free peer-to-peer services have largely contributed to the demand for streaming audio, it is expected that consumers will become more receptive to fee services in the future, with net music sales forecasted to represent 25 percent of U.S. music spending by 2008. Indeed, it appears that consumers are gradually becoming accustomed to paid content services, with Ipsos-Reid reporting an increase in the number of paid downloaders from 27 percent to 31 percent between June and September of 2002.

Enablers/Opportunities

Streamies represent an educated, lucrative market segment and also one willing to pay for broadband benefits. According to Arbitron/Edison Media Research, 47 percent of audio streamies indicate they dislike slow downloads and choppy quality of streaming content. Accordingly, 34 percent of audio streamies indicate a willingness to pay a small fee if the audio is of highest quality without pausing or buffering. DSL providers may respond to this market request by offering session resource broker services that allow a user to upgrade bandwidth temporarily on-demand or by partnering with content providers in storing such content closer to the network edge.

Although audio streaming provides an additional broadband application, service providers attempting to charge for such content may encounter resistance from users accustomed to free peer-to-peer services. Despite the RIAA's efforts to enforce laws associated with illegal music piracy, such efforts are unlikely to change behavior. According to the Pew Internet Project, nearly two-thirds of downloaders report a lack of concern as to whether said material is copyrighted. While the RIAA's attempts may not dramatically change behavior, there is hope that popular music aggregation services, such as iTunes, Rhapsody, and buymusic.com, will provide the library collection, ease of use, and favorable price points necessary to gradually move the market from free- to fee-based services.

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As most of the applications discussed are synergistic with one another, there is an opportunity for service providers to provide an integrated value proposition consisting of home networking with streaming audio services. Such a solution resonates with consumers interested in using home networking to share audio files across entertainment devices in the household. Additionally, “streamies” have a higher likelihood to also engage in gaming activities, therefore broadband providers may also choose to integrate an on-line gaming service or console device as an option for these consumers.

Conclusion

Telcos have proven to be resilient competitors, innovating beyond landline voice to advanced broadband and wireless solutions. In an ongoing effort to maximize wallet share and defend their turf against encroaching MSOs that offer triple-play bundles, the stakes are higher than ever in the broadband war. Although most have now responded with competitive pricing to appeal to a middle-market consumer, the telco must once again innovate and adopt new broadband applications to fuel market-share growth and reverse declining revenues in their core voice business. Telcos have a window of opportunity in which to exploit their interactive strengths against MSO competitors and drive on-demand services. Technical advancements have converged with consumer demand to provide meaningful broadband applications consumers are both willing to pay for and stay for. It is within these applications that telcos have renewed opportunity to drive new revenue streams and protect their customer base.

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