

# Broadband Do-It-Yourselfers

Developers of master-planned communities without access to first-class internet service have another option: Create their own infrastructure.

By David Daugherty / *Clarus Broadband*

**R**emember the expression, “If you want something done right, do it yourself”? Attributed to Napoleon Bonaparte, this saying sums up the frustration of a growing number of large bandwidth consumers.

Master-planned community (MPC) developers such as Hillwood Communities and Republic Property Group (whose Walsh community was profiled in the August-September 2017 issue of **BROADBAND COMMUNITIES**) belong to this growing group of broadband consumers. More important, they have the bandwidth appetite and financial means to make a difference for an emerging and demanding demographic – millennials. Millennials (also known as Generation Y), the demographic cohort following Generation X, are notable for their increased use of and familiarity with communications, media and digital technologies.

According to the 2017 State of the Nation’s Housing Report from Harvard University’s Joint Center for Housing, millennials account for 16 million of the nation’s 124.5 million households. By 2035, millennials will account for 49.8 million households “and are thus reshaping housing [and internet] demand in profound ways.”

## A NEW BROADBAND NARRATIVE

Serving the millennial generation will require thinking about broadband in new ways. Several concepts will form the foundation for a new narrative around the deployment and support of internet services. First is the difference between internet access (which can be thought of as

a consumer good) and an internet utility. A utility provides adequate supplies of an essential service throughout a community in a consistent, reliable, problem-free manner.

Second is the need for proactive management. Given the rapidly changing technical landscape, the deployment of reliable infrastructure that will deliver uninterrupted service over time is not a static problem. Problem-free operation over time requires real-time feedback and adjustments to infrastructure and operating procedures. I call this “temporal stability.” To achieve temporal stability, an internet operator must design a system able to anticipate and respond to problems.

The impact of temporally stable broadband on real estate investments has become material. For several reasons, real estate developers, home builders and real estate management companies cannot always depend on incumbent ISPs to deliver temporally stable, utility-quality broadband. First, the limited geographic footprints of the incumbents make it difficult for national developers and property managers to get consistent services across markets. Second, there are no guarantees that ISPs will continue to maintain their networks over time in a way that will meet communities’ requirements. Finally, networks have been effectively extended into subscribers’ homes as subscribers add more and more connected devices, and not all ISPs are willing to provide utility-quality broadband within homes.

As a result, many developers, builders and management companies are considering

Harvest in Argyle, Texas, is one of Hillwood's tech-centric, smart-home communities.



forming in-house broadband companies (IBCs). They are DIYers.

Developers' building fiber infrastructure is not a new idea. Many did just that in the pre-recession heyday of MPCs. The new twist on this old model is that instead of considering fiber and conduit as assets in the same category as water pipes, developers are now more likely to realize that their fiber infrastructure requires ongoing expert management.

Given that IBCs aren't necessarily experts themselves, one way for them to manage their fiber assets is to use a franchise-like model, in which their small, in-house service organizations are backed by mature, centralized management companies tuned to the specific needs of the community. A centralized management company can use an established support model that the IBC can brand with its own name, bringing economies of scale to bear and making high-quality support available at a low cost.

### LESSONS FROM HISTORY

Tom Woliver, director of planning and design at Hillwood Communities, explains why he is one of a growing

number of master-planned community designers looking for alternative broadband options. "Historically," he says, "getting internet into our communities has not been that difficult because the return on the investment for the service provider has been significant and can be absorbed over thousands of homes in master-planned communities. Pre-recession, all the larger ISPs would come into our communities and deploy FTTH at no cost to us. Post-recession, this is no longer the case. The days of speculative investment in community fiber by incumbent broadband providers are over."

This shift in business posture by service providers, combined with the growing number and complexity of smart-home devices, has left many real estate developers in confusion. It has created a rapidly growing demand for a new kind of broadband solution or partnership.

Even the original strategy was not problem-free. Woliver cites the community of Heritage as an example. In 2000, Hillwood developed Heritage, a 2,000-acre development on the north side of Fort Worth with roughly 3,000 homes. It was designed to be the

first fiber-to-the-home community in Texas. To facilitate the development of community fiber plant, Hillwood partnered with a small local provider, One Source Communications. Hillwood also formed a collaborative among builders to define a smart-home wiring specification for homes built in this community.

"This worked out pretty nicely for us and OneSource initially," recalls Woliver. "OneSource got a bulk service, and we were able to promote high-speed internet with little to no infrastructure investment."

About halfway through construction, Verizon overbuilt the community. The competition undermined the One Source business model. Although residents got a wider choice of internet service providers, One Source lost the ability to sustain an acceptable level of customer satisfaction.

For real estate developers who depend on broadband to attract and retain residents, this could become a much larger problem over time. Woliver believes developers can avoid this problem by forming partnerships with ISPs in which the developer (and, eventually, the HOA) owns the

The net effect of the broadband hurricane on internet service providers will be similar to the effect of the 9/11 attacks on the airline industry.

infrastructure and provides internet access as a utility, paid for through HOA dues or property assessments. In this model, residents can still purchase services from other providers if they prefer, but the payments they make through HOA dues guarantee a revenue stream sufficient to support utility-level broadband throughout the community.

## DIVERGING PATHS

The problem became more acute as ISPs' business models began to diverge from those of real estate developers. ISPs are shifting infrastructure investment to backhaul for 5G, which they expect to have a higher return on investment. ISPs, including large incumbents, still partner with developers (including Hillwood) on MPCs when such partnerships align with their business models. However, they have become less willing overall to invest in wired networks for new MPCs, and they are not always willing to provide services on networks they do not own. This leaves real estate developers to pick up the slack by investing in infrastructure and then turning the assets over to ISPs.

At the same time, reliable broadband is increasingly important to real estate developers. After the recession, Hillwood began construction of its "Big Five" tech-centric, smart-home communities in Texas. Woliver says, "To help us sort through a wide range of smart-home and security appliances, we ended up partnering with a local integrator to develop a brand-agnostic, smart-home specification that would accommodate a wide range of smart appliances. This includes things like wireless access control, thermostats, and security cameras."

In the early days of home automation, builders were reluctant to embrace any kind of standard. Unfamiliar with smart-home technology, they did not want to restrict their ability to up-sell smart-home features. This was true at Hillwood, but the developer imposed standards on builders anyway. "As it turned out," recalls Woliver, "after we began imposing home automation standards on our builders, almost 97 percent of our smart-home buyers purchased other home automation products." That was in 2013 through 2015; today, smart-home wiring and functionality are expected in new MPCs. The challenge developers face today is a rapidly growing assortment of smart-home appliances. In this environment, reliable broadband is mission critical.

Hillwood launched several new MPCs in 2018. One has 3,000 new homes in one of the highest-growth areas in the United States. None of the legacy ISPs are willing to invest in the infrastructure, and customers are demanding internet speeds of at least 1 Gbps.

"This is a hot topic with my other developer colleagues," notes Woliver. "Current broadband service providers have a single-minded focus on 5G backhaul investment and collecting subscribers. This helps increase corporate valuation in an increasingly chaotic M&A environment. The days of investment in community FTTH infrastructure are over."

## THE BROADBAND HURRICANE

Given the array of rapidly changing technology and customer expectations, demands on infrastructure will

continue to escalate to the point of failure. This failure will first occur at the edge of the network where services are delivered. As with catastrophic weather events, the ability to negotiate the coming broadband hurricane will depend upon preparation and real-time, all-hands-on-deck support during outages. The bad news is that the coming storm will not have a geographic or temporal epicenter. It will hit the edge of the infrastructure and not abate over time.

The net effect on internet service providers will be similar to the effect of the 9/11 attacks on the airline industry. Preparation for this storm and the subsequent establishment of sustained, acceptable performance will require massive investment in infrastructure and real-time security at the edge of the network. This will necessitate a complete redesign of internet infrastructure and underlying customer support. Traditional models will continue to fail, and dissatisfaction with incumbent service options will escalate.

The resultant evolution of service models will ultimately be driven by collective buying. Existing business models for incumbent providers are not sufficiently robust to survive the broadband hurricane and will necessitate a change in the ownership of infrastructure at the edge of the network. Those consumers who can organize and negotiate bulk service solutions – such as MPCs – will be among the first to stabilize. Another important element of future internet services will be the active participation of consumers in the ongoing operation and security of the network. This kind of partnership with service providers will also provide the feedback necessary for sustained, acceptable performance.

Add it all up, and the result is an emerging service model driven by broadband do-it-yourselfers. ❖

*David Daugherty is the chairman and co-founder of Clarus Broadband. Clarus is dedicated to the development and marketing of broadband in underserved markets. Contact David at [david@clarusbroadband.com](mailto:david@clarusbroadband.com).*