

ADVANCING THE GIGABIT SOCIETY

ADTRAN®



BROADBAND TRANSFORMS COMMUNITIES



THINGS ARE CHANGING

The rate of change is constantly accelerating. This is evident when you look at the network and realize that in less than a decade we have seen the emergence and domination of smart phones, tablets and a wealth of connected devices. Where only a few short years ago having an Internet connection was a luxury, today it is a necessity. This is true not only at home or work – but anywhere at any time. The demand for bandwidth is projected to increase 10x in the next 10 years, and networks must evolve to meet this need. That leads us to the Gigabit network.

THE NEED FOR GIGABIT

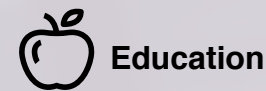
Gigabit networks have become more prevalent in the last five years. Communities, both rural and urban, have embraced the vision for Gigabit services, and are using it as a force for change within the communities they serve. Gigabit services connect the citizens of a community and enable growth and prosperity. Areas that were once desolate or dying have found new life through the emergence of Gigabit services. These ultra-high-speed broadband networks are also serving as a catalyst for the future, bringing new jobs, new innovation and new beginnings.

“Communities around the globe — from dense urban to sparse rural and everywhere in between — have determined that affordable high-speed broadband is no longer a nicety, but a requirement for economic prosperity and quality of life...”

“Deploying fiber-rich Gigabit broadband is the logical way to go. It gives the network operator great flexibility to serve business and residences with a range of cost-effective options. We know that when broadband rates increase the global innovation engine creates new compelling applications that drive economic development and improve our lives.”

Greg Whelan, Principal, Greywale Insights

DRIVERS FOR GIGABIT COMMUNITIES



Education



Business and Job Growth



Improved Healthcare



Civic Life



Connected Homes



Municipal Services

Recent surveys have shown growing momentum for fiber-based broadband networks. Research firm Ovum forecasts that by 2023, fiber networks will serve approximately 60 percent of 1.2 billion fixed broadband subscribers globally.

In the past three years, ADTRAN has witnessed firsthand the positive impact communities have enjoyed from these deployments. Some key benefits include:



Economic Development

The availability of Gigabit throughout towns and cities has proven to attract new businesses to the area, stimulating local economies. According to a Fiber Broadband Association study, communities with widely available Gigabit broadband access experience a 1.1 percent higher per capita GDP than areas without Gigabit. Cities in Mississippi are seeing this firsthand as they transform from sleepy college towns to hubs for future business investment, attracting global companies creating thousands of local jobs.

Education

Gigabit broadband is providing school districts with the necessary bandwidth to enable online education creating more personalized learning experiences as well as maximizing the benefit of E-rate funding projects. Schools throughout 15 Ohio districts are using Gigabit service to meet local educational mandates while transitioning from a structured to individualized learning experiences in the classroom. The technology is allowing schools, administrators, teachers and students to communicate in new, innovative ways while learning at their own pace.

Real Estate

A recent Fiber Broadband Association study showed that communities with access to fiber-delivered Internet can increase home values by up to 3.2 percent, or \$9,700+ on a median-priced home of \$300,000 and renters are willing to pay an eight percent premium per month or an additional \$1,000 per year. According to real estate agents in Oregon, this holds true as they are seeing a rise in Gigabit

popularity in neighborhood criteria. Agents have reported an increase in home buyers looking for properties specifically in areas currently deploying Gigabit, or expecting to in the near future.

Telecommuting

Gigabit is opening the doors for increased work flexibility by allowing employees to work remotely. Residents located just outside the tech hub of Silicon Valley often experience faster speeds at home vs. their workplace. As a result, telecommuters are able to enjoy a more affordable, higher quality of life without having to give up big-city jobs. All the time saved in not commuting also translates to a lower carbon footprint.

Agriculture

The delivery of Gigabit speeds is helping streamline crucial agriculture processes and enable new services. In Indiana, a dairy farm is using Gigabit broadband to monitor milk production and processing remotely. The farm is also delivering remote and on-site educational experiences by supporting connected, interactive learning centers for children.

Healthcare

Hospitals and healthcare facilities are deploying Gigabit broadband as they look to boost the quality of patient care. For those with ultra-fast broadband speeds, doctors, specialists, and nurses are able to work efficiently with colleagues on-site and remotely. In Tennessee, doctors are able to provide care that previously wasn't available, with a local knee surgeon using Gigabit broadband to assist with 3D printing for developing patient-specific knee replacements.

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WHERE WE ARE

At ADTRAN, we believe amazing things happen when people connect—and that fiber broadband will bring exciting discoveries and transformations to the Gigabit Society. From the cloud edge to the subscriber edge, we are helping communications service providers around the world deploy and scale broadband services that connect people, places and things—transforming communities, rebuilding urban centers, revitalizing schools, stimulating growth and delivering innovative residential and business services.

GETTING THERE FROM HERE

So, the question remains, “How do we get there?” Gigabit service delivery has traditionally meant building FTTH networks which require fiber to be pulled throughout the home. ADTRAN understands the common concerns for service providers evaluating Gigabit deployment options such as the overall cost to build an all-fiber network and how to keep up with subscriber activations and subsequent service or network upgrades in light of growing demand. Technology breakthroughs now offer lower deployment costs, improved time to market and doubled network longevity all while supporting new service creation benefits.

There are new technologies and techniques that support Gigabit speeds in a more cost-effective and timely manner. Gfast, DOCSIS 3.1, and 5G are access technologies that respectively enable operators to extend Gigabit services over existing phone wire, coax cabling, or mobile networks. With these deployments, fiber is typically deployed to the building basement or street curb, and then any of these new technologies carry the Gigabit services to the customer device.

Current FTTH solutions support a finite number of true Gigabit broadband customers and are simply not designed to support premium symmetrical business and backhaul services. Next-generation symmetrical 10 Gbps broadband solves this issue by supporting many more Gigabit services and even offering multi-Gigabit services. This technology uniquely enables both existing residential FTTH customers and early business adopters to be supported on a single, common access architecture.

The key to winning the Gigabit services battle and building customer loyalty is in delivering a simple, intuitive broadband experience. New software-defined access (SD-Access) architectures and virtualized services are allowing operators to rapidly create and automatically activate new services. SD-Access networks combined with powerful software tools that simplify service delivery while providing deep insight into the subscriber experience, allow service providers to quickly monetize investments in their new Gigabit broadband networks.

ADTRAN offers the most open and complete 10 Gigabit broadband access portfolio on the market today. ADTRAN solutions optimize existing technology infrastructures and help create new, multi-gigabit platforms that leverage cloud economics, data analytics, machine learning and open ecosystems—the future of global networking. Internet the way it should be.

To find out how broadband transforms communities and learn more about Gigabit technologies, visit www.adtran.com/broadband



Gigabit broadband transforms communities,
rebuilds urban centers, revitalizes schools,
stimulates economic growth and delivers
innovative residential and business services.



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