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December 26, 2019

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James Baldwin thought he'd never see his granddaughter's face again. The 18-year Army veteran started to lose his vision three years ago from an injury he suffered in the Gulf War. He lost his left eye and was left with limited vision in his right, reducing his sight to light and shadows. He can see shapes but not faces.

Reuters

**The Netflix decade:
How one company
changed the way we
watch TV**

CNBC

**The decade DC
turned on Big Tech**

The Hill

**Mulvaney deputy
tapped for White
House tech post**

New York Times

**How a Top Antitrust
Official Helped T-
Mobile and Sprint
Merge**

LightReading

**Cable's Greatest
Hits of 2019**

Ars Technica

**Why the 2010s were
the Facebook
Decade**

Allentown

Morning Call

**Fred Rooney, former
Lehigh Valley
congressman, dies
at 94**

That was until October, when Baldwin put on a pair of **NuEyes** electronic glasses, which enhance the vision of visually impaired people. Suddenly, he could clearly see his wife sitting beside him. Leaves on trees. A picture of his granddaughter in her basketball uniform. "She loves basketball, she loves softball, and being able to see her like that, it meant a lot," Baldwin, 58, of Alexandria, Va., said last week. "I can be standing right next to her and wouldn't really see her, but being able to see her face, what a beautiful young lady she's turned into, it was amazing."

Baldwin received the "early Christmas present" from Comcast and NuEyes, a wearable technology start-up. NuEyes customers can now watch live TV and on-demand content through the smart glasses and virtual reality headset with the Xfinity Stream app, Comcast said this month. The partnership was the latest announcement from Comcast this year about new programs, products, and services for people with disabilities. Earlier this month, Comcast said it was the first in the cable industry to offer customer service in American Sign Language. In June, the company **unveiled a web-based remote** allowing people with physical disabilities to control their televisions with their eyes. And in August, Comcast expanded its low-cost broadband program to low-income households that have people with disabilities.

Comcast is among major companies using new technology to design products that are more inclusive. Microsoft, for example, sells an adaptive Xbox video game controller with large buttons for gamers with limited mobility. For blind consumers, Apple's devices include **screen reading technology** that reads web content aloud. Products that aren't tailored for people with disabilities, such as Amazon's Alexa voice assistant, have helped too, experts said. "Accessibility is not a feature. Accessibility really is the measure of how effective or how inclusive your product is," said Tom Wlodkowski, Comcast's vice president for accessibility. "The idea was, let's build products that work for everyone. And let's open up our products to the widest possible audience inclusive of people with disabilities."

Wlodkowski, who is blind, noted that **a third of U.S. households have a member with a disability**, according to a 2016 Nielsen survey. "The disability community **represents \$200 billion in discretionary spending** power," he said. "So it makes sense to do this." He joined Comcast in 2012 and oversees a dozen people focused on accessibility while working with the company's product teams. Comcast has developed features in recent years such as "voice guidance," which helps low-vision consumers navigate the TV by reading what's on screen aloud, and "video description," which is extra narration during pauses in dialogue in a movie or show.

Comcast now has four customer-service employees trained to communicate to deaf customers in American Sign Language. The program is in a pilot phase, but the company said it will evaluate and adapt in the future. It is expected to reduce average call times by up to 40%. Comcast announced the program in December at the Pennsylvania School for the Deaf, where it gave 90 students free tablets and six months of internet service.

Comcast's eye-control remote was recently **named one of 100 "Best Inventions" of 2019 by Time magazine**. Customers can change channels

and record and search for shows on a tablet or computer screen using eye-tracking technology. Comcast said it isn't measuring how many customers are using the remote right now. For customers such as Jimmy Curran, 30, a Philly resident with spinal muscular atrophy, the eye control remote means he no longer needs others to operate the TV. Before, he was sometimes stuck on the same channel for a long time, missing out on college football games he wanted to watch. "Saturdays are typically times when I spend time alone without an aide or company," he said. "So it's enabled me to have the ability to change the channel."

While Comcast's eye remote is available for free online, consumers still need compatible equipment that can cost hundreds or even thousands of dollars. Smartglasses such as NuEyes can **cost thousands of dollars**, too. And many people with significant disabilities are on limited incomes, experts said. "I think anything that enables people to manage their own environment on their own terms is worthwhile," said Dyann Roth, the CEO of Inglis, the largest private provider of affordable accessible housing in the Philadelphia region. "The challenge, I think, and not from the technical standpoint ... is it has to be affordable."

There are still some gaps in the technology. Comcast's voice remote, for example, helps people with disabilities by letting them change channels without pushing several buttons or seeing what's on screen. But it still requires consumers to press one button before speaking, limiting those with physical disabilities. "In general, I think there is definitely a large need for some type of hands-free remote system for people to be able to control their TVs, which has been an ongoing need for a long time," said Jessica Doran, therapy supervisor in the spinal cord injury program at Magee Rehabilitation Hospital in Philadelphia. — *Philadelphia Inquirer*

Americans in low-income neighborhoods and rural areas get slower broadband speeds even though they generally pay similar monthly prices as their counterparts in wealthy and urban areas. The country's biggest broadband provider charges more in markets without competition. Most people don't have a choice.

These are among the findings of a Wall Street Journal analysis of America's internet bills. After **a small sample of bills revealed** that broadband prices varied drastically across the country, the Journal collected and analyzed information from more than 3,300 bills from homes in all 50 states. Billshark, a company that helps customers negotiate better rates with their cable and telecommunications providers, provided the vast majority of the bills; BillFixers, another such company, and Journal readers also sent in a sizable number.

We found 198 different monthly internet sticker prices, ranging from \$5 in a bundle bill in Plano, Texas, to \$175 for a superfast connection in Anchorage, Alaska—evidence of how much providers tailor services and pricing. Much like airline fares, chances are you are paying a different price than your neighbor for the same broadband speed. "When providers have market power, they will want to price-discriminate—charge higher prices to consumers who are willing to pay more and lower prices to consumers who are willing to pay less," said Oren Bar-Gill, a law and economics professor at Harvard Law

School. Companies say there are many reasons why prices vary, including competition in local markets, promotional offers and the costs of connecting different regions.

The cable industry trade group, NCTA—The Internet & Television Association, said it isn't surprising that prices vary among markets and the industry has invested heavily to boost broadband speeds across the country. The group said it was "deeply disappointed that this story seems to lack thoughtful economic analysis and unfortunately paints a false portrait of the American broadband marketplace."

The NCTA said superfast 1-gigabit-per-second service is now available to more than 80% of U.S. homes and the industry has connected more than eight million low-income people with subsidized internet service. For households with stand-alone internet service, the median speed in our analysis was 100 megabits per second, or Mbps. The median monthly internet cost was \$66, including internet-related fees. For customers with bundles, the median speed was 100 Mbps and the median monthly cost of the internet portion of their bill, plus internet-related fees, was \$57. Bundle customers paid a median of \$143 a month for their total bill, including discounts and other services.

More than 600 bundle bills reviewed by the Journal—mostly from Comcast Corp. , but also a variety of smaller providers—didn't specify the cost of internet, instead listing the total cost for the multiple services the customers were buying. At Comcast, monthly internet cost ranged from \$45 to \$155 for stand-alone customers buying its most popular speed in our sample, 150 Mbps. Cable rival Charter Communications Inc., which sells its services under the Spectrum brand, also had a variety of prices for its most popular speed in our sample, which was 100 Mbps. The monthly internet cost ranged from \$40 to \$92.

A Charter spokeswoman said the company offers a "consistent, straightforward value proposition." She said pricing variations are caused by temporary promotions and customers on legacy plans that were sold by Time Warner Cable and Bright House Networks, the operators Charter bought in 2016 to become the country's second-biggest cable company. Comcast, the largest cable operator by subscribers, declined to comment, referring questions to the NCTA statement.

Another factor that affects your price: how long you have been with a provider. Providers offer smaller discounts to longtime customers. Customers who had spent less than a year with their provider got a median discount of \$21 a month, while the majority of people who had stuck around for more than a year didn't get a discount. "They are playing this big game with the consumer," said Kerry VerMeulen, an AT&T Inc. customer in Grand Rapids, Mich. "They don't post their prices reliably. There is a lack of visibility." An AT&T spokesman said, "Our prices are in line with the industry and reflect the significant investment required to provide high-speed internet service across the country." The spokesman said that based on AT&T's own pricing data, a new customer shopping for a 100 Mbps connection today can find prices more than 40% cheaper than four years ago.

Low-income areas and high-income areas pay similar median monthly costs—about \$66—for stand-alone internet, but poorer areas get 40%

slower speeds, our analysis found. Customers in high-income areas get a median speed of 150 Mbps, while the median speed was 100 Mbps in low-income areas. Bills in low-income areas had a median of \$10 in added internet-related fees. Bills in high-income areas tended not to have such fees. Of our bills from low-income areas, 4% were from rural areas and the rest were from more populated and urban areas.

In some cases, low-income areas are paying higher prices for the same speed. For example, a customer of Cox Communications Inc. in a low-income area of Baton Rouge, La., pays \$80 for a speed of 300 Mbps while another household near Laguna Beach, Calif., a wealthier area, pays \$55 for the same speed from the same provider. While the Baton Rouge customer had a \$10 internet-related fee tacked on, the California subscriber had none.

A Cox spokesman said perceived pricing disparities were likely the result of promotional offers or discounts, but “our standard pricing is now consistent across markets nationwide.” He said the company provides a low-income internet service for \$10 a month to households with kindergarten-through-12th-grade children and that participate in a government assistance program. Other companies, including Comcast, AT&T and Charter, have similar offerings for qualifying households.

In rural areas, the speed gap for stand-alone internet customers is especially stark at the low end of the market, or connections at 55 Mbps or slower. In that segment, rural customers paid a median monthly cost of \$55 for a median speed of 12 Mbps. Urban customers got twice the speed, 25 Mbps, for a median monthly cost of \$47. Overall, rural customers got a median speed of 100 Mbps, 40% slower than urban customers’ median speed of 150 Mbps, though both groups paid similar internet prices.

For example, a Verizon Communications Inc. customer in a rural area of [West Decatur, Pa.](#), pays \$55 for 3 Mbps. In New York City, another Verizon customer pays \$40 for 10 Mbps. Alan Slater said he was surprised when he rented a home in Aldie, Va., a fast-growing suburb of Washington, D.C., and found that his 50 Mbps internet from Verizon made up just \$45 of his total monthly bundle bill. In his rural home in Urbanna, Va., he pays \$68 monthly for 3.5 Mbps Verizon DSL service and landline phone service, which Verizon requires. “It makes no sense to me,” he said. “There has got to be more fairness.” Verizon didn’t respond to requests for comment.

Charter’s median cost for stand-alone internet in urban and rural markets was the same, around \$70, but the median speed was 200 Mbps in urban centers and 100 Mbps in rural areas. The Charter spokeswoman said the company has been upgrading to 200 Mbps standard speeds and has completed more than 60% of its 41-state service area. The NCTA said lowering the cost of providing broadband service in rural America is one of its major goals. “It is well understood that delivering a service to homes that are separated by many miles with fewer consumers and more difficult geography is more expensive,” the group said.

We examined the number of broadband providers available at the addresses listed on 2,125 internet bills, based on competition data provided by Billshark. We found that 68% of households in that sample

don't have the option to switch to a second high-speed provider. Those addresses were either served by a single provider or could only switch to slower connections via traditional telephone lines or satellite services. About one-third of the addresses were in competitive areas, meaning customers had at least two fiber or cable high-speed broadband options. The rollout of high-speed 5G wireless networks could change that landscape in future years.

Competition isn't the only reason providers sell faster connections, which often come with higher prices. Of 143 bundled and stand-alone customers paying for speeds at or around 1 gigabit a second (1000 Mbps), 55% were in competitive areas. In this segment, the median monthly internet cost for stand-alone internet service was \$90. A recent Journal study found that for a typical household the benefits of paying for more than 100 Mbps are marginal at best. **Faster speeds don't necessarily mean a better streaming experience:** Picture quality doesn't improve much, and video content doesn't load more quickly.

How much does competition in a local market affect broadband prices? It depends on the provider. Comcast customers in competitive areas tend to get a better deal for the same median speeds, our analysis found. For example, the median sticker price of stand-alone internet, before fees or discounts, dropped \$7—or 12%—in areas where Comcast competes with other fiber-optic or cable providers. Our study found discounts were 25% higher in areas where the company faces competition. For example, a customer in Jackson, Mich., where Comcast has competition pays \$58 for 60 Mbps and gets a \$24 discount. But another 60 Mbps Comcast subscriber in an area of Boston where Comcast is the only provider pays \$73 and gets a \$14 discount.

Tom Pokorney, a Chicago Comcast customer, said he moved into an apartment building in July where his only choice is Comcast. When his first-year promotion expires next July, the bill will rise from \$50 to \$80 for his 200 Mbps plan. "I don't have any alternative beyond doing some hard negotiation and bluffing. A 60% increase in my bill is pretty significant," he said. Spectrum bills, on the other hand, have the same median prices in markets where Charter has a competitor and those where it doesn't. — ***Wall Street Journal***

