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Digital Divide Is Wider Than We Think, Study Says

By Steve Lohr

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Ferry County in northeastern Washington spans more than 2,200 square miles of mostly forestland, rivers and lakes. And according to the Federal Communications Commission, everyone in the sprawling county has access to broadband internet.

But that is not the reality experienced by the roughly 7,500 residents of this county, which is rich in natural beauty but internet-poor.

The county seat, Republic, has basic broadband service, supplied by a community cable TV company owned by residents. But go beyond the cluster of blocks in the small town, and the high-speed service drops off quickly. People routinely drive into town to use Wi-Fi in the public library and other spots for software updates, online shopping or schoolwork, said Elbert Koontz, Republic's mayor.

"We don't really have broadband coverage across the county," Mr. Koontz said. "We're out in the woods."

A new study by Microsoft researchers casts a light on the actual use of high-speed internet across the country, and the picture it presents is very different from the F.C.C. numbers. Their analysis, presented at a Microsoft event on Tuesday in Washington, D.C., suggests that the speedy access is much more limited than the F.C.C. data shows.

Over all, Microsoft concluded that 162.8 million people do not use the internet at broadband speeds, while the F.C.C. says broadband is not available to 24.7 million Americans. The discrepancy is particularly stark in rural areas. In Ferry County, for example, Microsoft estimates that only 2 percent of people use broadband service, versus the 100 percent the federal government says have access to the service.

Fast internet service is crucial to the modern economy, and closing the digital divide is seen as a step toward shrinking the persistent gaps in economic opportunity, educational achievement and health outcomes in America. In some areas with spotty or no service, children do their homework in Wi-Fi-equipped buses or fast-food restaurants, small businesses drive to internet hot spots to send sales pitches and medical records are transported by hand on thumb-drive memory sticks.

Accurate measurements on the reach of broadband matter because the government's statistics are used to guide policy and channel federal funding for underserved areas.

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"It's a huge problem," said Phillip Berenbroick, a telecommunications expert at Public Knowledge, a nonprofit technology policy group. "The result is that we're not getting broadband coverage and funding to areas that really need it."

Telecommunications experts and some politicians have pointed to the shortcomings of the official F.C.C. statistics for years. Last year, the agency began a formal review, still in progress, of how to improve its broadband measurements.

“Maintaining updated and accurate data about broadband deployment is critical to bridging the digital divide,” Ajit Pai, the commission chairman, said at the time. “So we’re teeing up ideas for collecting more granular and standardized data.”

The Microsoft researchers shared their analysis with F.C.C. officials. The agency declined to comment on the findings.

The issue with the current F.C.C. statistics, experts say, is that they rely on simplistic surveys of internet service providers that inherently overstate coverage. For example, if one business in an area has broadband service, then the entire area is typically considered to have broadband service available.

The Microsoft researchers instead looked at the internet speeds of people using the company’s software and services, like Office software, Windows updates, Bing searches and maps, and Xbox game play. The Microsoft data is much more detailed than the official government statistics, said John Kahan, Microsoft’s chief data analytics officer for external affairs.

Microsoft plans to put the national comparisons, as well as state and county data, on a website this month.

The Microsoft analysis also includes county unemployment data, which points to the strong correlation between joblessness and low rates of broadband use. The unemployment rate in Ferry County, for example, is 11 percent, more than twice the statewide rate.

“The worst place to be is in a place where there is no access to the technology everyone else is benefiting from,” said Brad Smith, president of Microsoft.

Expanding broadband also benefits Microsoft and other tech companies because it enlarges the market for their products and services. And like others, Microsoft is promoting a potential solution.

Republic is the seat of Ferry County, where a white-space broadband effort — sometimes called “super Wi-Fi” — will begin next year. Rajah Bose for The New York Times

Microsoft’s plan is a mix of old and new technology that involves harnessing the unused channels between television broadcasts, known as white spaces. The technology is sometimes called “super Wi-Fi” because it behaves like regular Wi-Fi but uses low-powered television channels to cover greater distances than wireless hot spots. It is a less expensive alternative to wiring homes, particularly in less-populated and remote regions.

The technology is promising, experts say, but one tool among a handful needed to bring broadband connectivity to rural America. Other tools include fiber networks, satellite coverage and high-speed mobile service.

A key challenge is bringing down the cost of devices that use white-space technology. In mid-2017, they cost $800, but are now just $300, Microsoft says. The goal is to get the price to $100.

Last year, Microsoft announced plans to work with internet providers and hardware firms to propel the adoption of white-space technology. To date, the company says, it has deals in 13 states to bring broadband to over a million people in rural areas.

Microsoft on Tuesday said its Airband initiative planned to reach three million rural residents by July 2022, a million more than its target announced last year.

Microsoft is urging the government to keep the white-space broadcast spectrum open for public use. It is also pushing to get a larger portion of the more than $4 billion a year that the F.C.C. and the Agriculture Department spend in grants and subsidies to bring broadband to rural areas.

Microsoft competitors and critics say one of the wealthiest companies in the world is lobbying for an advantage and government money. Broadcasters also worry the white-space technology could interfere with local television service.

“Broadcasters have always supported rural broadband deployment,” said Dennis Wharton, executive vice president for communications at the National Association of Broadcasters. “But we’re skeptical whether Microsoft can deliver that service without significant interference and disruption to local television signals in smaller markets.”

In Ferry County, a white-space broadband effort will begin next year. Declaration Networks, a company that focuses on bringing broadband to rural areas, has just received a commitment for money from the F.C.C. for the project.

“Ferry County has a lot of needs, and we’re going to try address that,” said Bob Nichols, chief executive of Declaration Networks, which is based in Vienna, Va.

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