Bridging the digital divide

A guide to internet availability, standards and access to funding across the United States and Britain

EPITIRO

The broadband landscape

The importance of reliable, affordable, high-speed broadband access has become universally recognized.

Brad Smith, president of Microsoft, has gone so far as to describe broadband as the

“electricity of the twenty-first century”

In a commercial world where a majority of transactions take place online, a lack of broadband infrastructure – and good, reliable service provision – can present businesses and entrepreneurs with significant challenges.

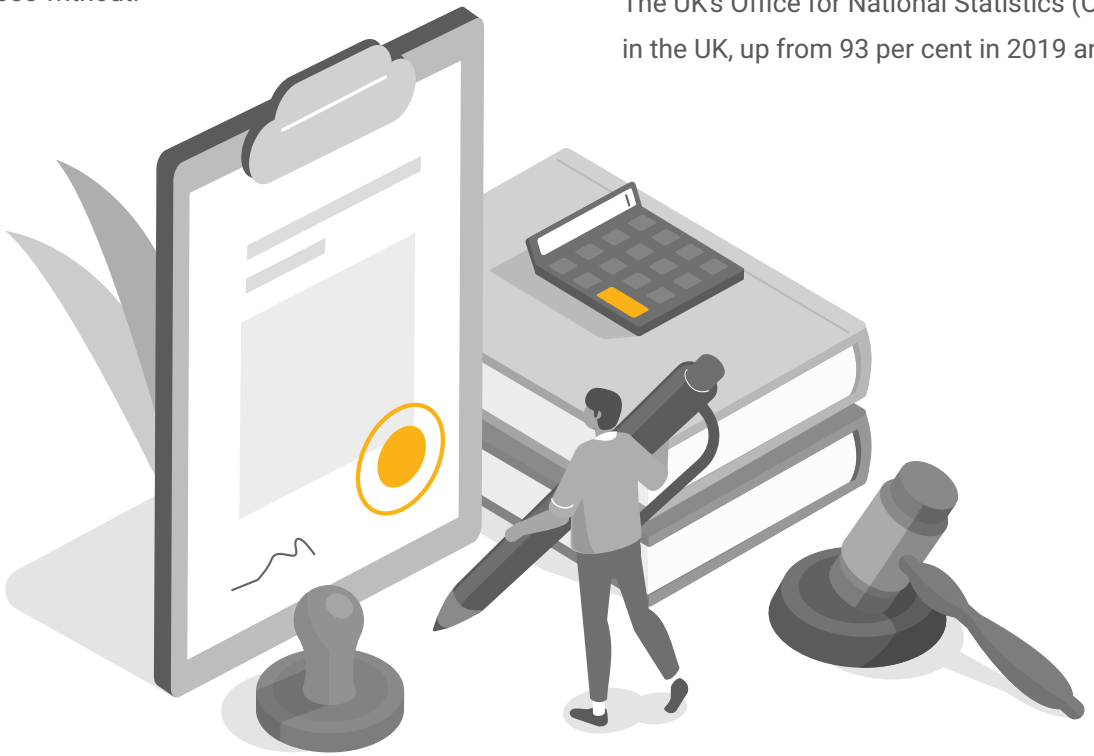
The digital technologies that increasingly support business and productivity growth, job creation and innovation are dependent upon good connectivity.

But there is currently a gap between the haves and the have-nots. The pandemic, which accelerated our reliance on connected applications, served to make these disparities in internet access and performance standards all the more pronounced.

The following guide provides an overview of the existing broadband landscape across the United States and Britain, considers what is changing and outlines how businesses can leverage internet monitoring solutions to help ensure they receive the services they need, and expect.

How is the law protecting connectivity standards?

Efforts continue to be made to improve the global quality of broadband service provision, and to close the gap between those with good access to high-speed internet, and those without.



Accessibility in the spotlight

Both the United States and Britain are moving closer to universal broadband access – but we're not there yet.

According to the Federal Communications Commission (FCC) 2021 Broadband Deployment Report, as of year-end 2019, around 96 per cent of the US population had access to broadband at its minimum speed benchmark of 25/3 Mbps.

The UK's Office for National Statistics (ONS) reveals the same level of internet access in the UK, up from 93 per cent in 2019 and 57 per cent in 2006.

Data collected from internet service providers (ISPs) by the FCC sits at the heart of US federal efforts to bridge the digital divide.

Pinpointing the disparities

To enable a more precise assessment of where broadband services are currently lacking, the 2020 Broadband DATA Act reformed the processes for data collection and broadband mapping.

In the wake of this new law, the FCC published a new map in August 2021 showing US mobile coverage and availability from the country's largest wireless providers, AT&T Mobility, T-Mobile, UScellular and Verizon.

According to Jessica Rosenworcel, acting chairwoman of FCC, the move represented progress in the organization's effort to "build next-generation broadband maps" that would "help to connect 100 per cent of Americans".

Its work continues, with the mobile map offering a preview of how data availability will be presented for fixed broadband services. Using multiple data sources, this will detail on a property-by-property, location-by-location basis, where broadband is available – either where there is a current connection, or where broadband could be connected, with a standard installation within 10 days.

Armed with this intelligence, ISPs and governments will be better placed to make informed decisions about where services are needed and how to fund expansion.

Broadband coverage across the UK is mapped by Ofcom with data on fixed broadband services collected from operators up to three times year. The regulator makes this information publicly available via its interactive, online broadband checker.

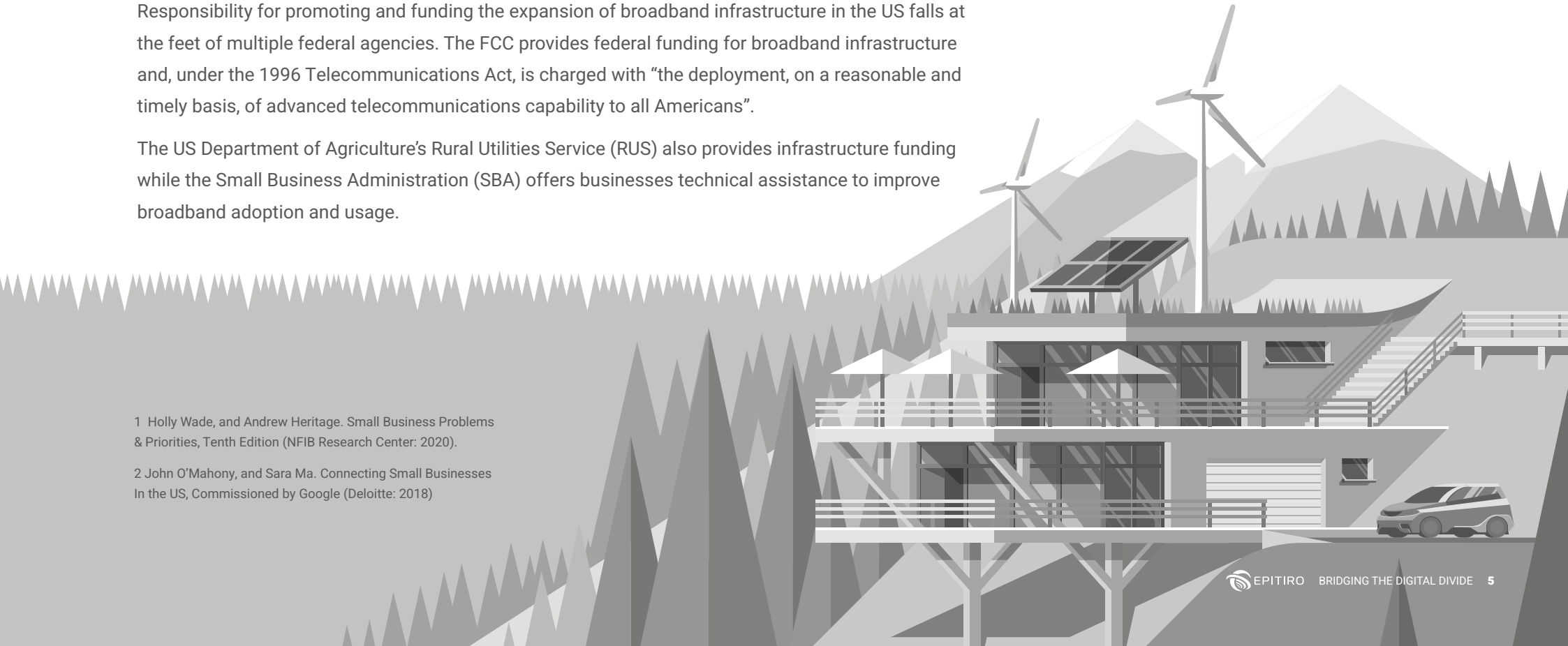
The rural challenge

Recent surveys conducted by the National Federation of Independent Business and Google, found that around eight per cent, or about two-three million small US business, still lack broadband access[1&2] – a problem that, understandably, is proportionally more acute in rural and Tribal areas.

Getting internet services to remote, rural locations can be a particularly difficult and expensive problem for providers, with low population densities often meaning lower commercial returns.

Responsibility for promoting and funding the expansion of broadband infrastructure in the US falls at the feet of multiple federal agencies. The FCC provides federal funding for broadband infrastructure and, under the 1996 Telecommunications Act, is charged with "the deployment, on a reasonable and timely basis, of advanced telecommunications capability to all Americans".

The US Department of Agriculture's Rural Utilities Service (RUS) also provides infrastructure funding while the Small Business Administration (SBA) offers businesses technical assistance to improve broadband adoption and usage.



1 Holly Wade, and Andrew Heritage. Small Business Problems & Priorities, Tenth Edition (NFIB Research Center: 2020).

2 John O'Mahony, and Sara Ma. Connecting Small Businesses In the US, Commissioned by Google (Deloitte: 2018)

Across the Atlantic, the 2021 Online Nation report from UK telecoms regulator Ofcom found that six per cent of UK homes – around 1.5 million – have no internet access. The UK National Audit Office (NAO), meanwhile, has said that 20 per cent of premises in rural areas are unable to access broadband speeds of 30 Mbps or more. This compares with 97 per cent in urban areas.

Here, responsibility at national level ultimately falls on central government to deliver on its digital infrastructure promises. The Department for Digital, Culture, Media & Sport manages the government's broadband policies and Building Digital UK (BDUK), a unit within the Department, is responsible for policy implementation.

Central government funding is also provided to local authorities and Local Enterprise Partnerships (LEPs) to subsidize infrastructure in areas not reached by commercial investment.

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Quality matters

The importance of strong broadband performance standards for the world of business is unequivocal, and where services fall short of expectations – notably in rural areas – the impact can be considerable.

According to a 2019 study by the US Chamber of Commerce and Amazon, nearly 20 per cent of rural small businesses in America generate the majority of their revenue (at least 80 per cent) by selling their products and services online. Furthermore, 66 per cent said poor internet connectivity negatively impacted their business operations.

A survey among members of the UK's Countryside Alliance, meanwhile, found that 80 per cent of rural businesses believed ultrafast fiber connectivity would have the single biggest positive impact on their recovery post-COVID. Thirty-eight per cent viewed their current internet connections as being unmanageably poor.

Current US policy, laid down by the FCC, stipulates that the minimum broadband standard should be no less than 25 megabits per second (Mbps) for data download and no less than 3 Mbps for uploads.

This standard was established in 2015 and in today's environment, it falls short of the baseline that many advocate. Zoom, for example, recommends a minimum upload speed of 3.8 Mbps for high-definition video calls.

With a federal government goal of ensuring high-speed broadband availability for all, the call has now gone out to raise the bar. Indeed, without a revised definition of high-speed broadband, targets may be met that fail to deliver adequate connectivity performance in the months and years ahead.

This message has been reinforced by the Government Accountability Office, which points out that "millions of small businesses continue to lack sufficient access to meet their needs".

The Accessible Affordable Internet for All Act, introduced in March 2021 by Rep. James E. Clyburn (D-S.C.) and Sen. Amy Klobuchar (D-Minn.), proposes a minimum 100 Mbps for both download and upload speeds.

The more recent Infrastructure Bill, passed by the Senate in August 2021, looks likely to supersede this and sets a threshold of 100 Mbps download speed and 20 Mbps upload speed for new broadband projects.

Since 20 March 2020 in the UK, the Universal Service Obligation has set a minimum download speed threshold of 10 Mbps, and an upload speed of 1 Mbps. This 'safety net' allows homes and businesses that don't get this to request an upgraded connection from BT (or, for properties in Hull, KCOM).

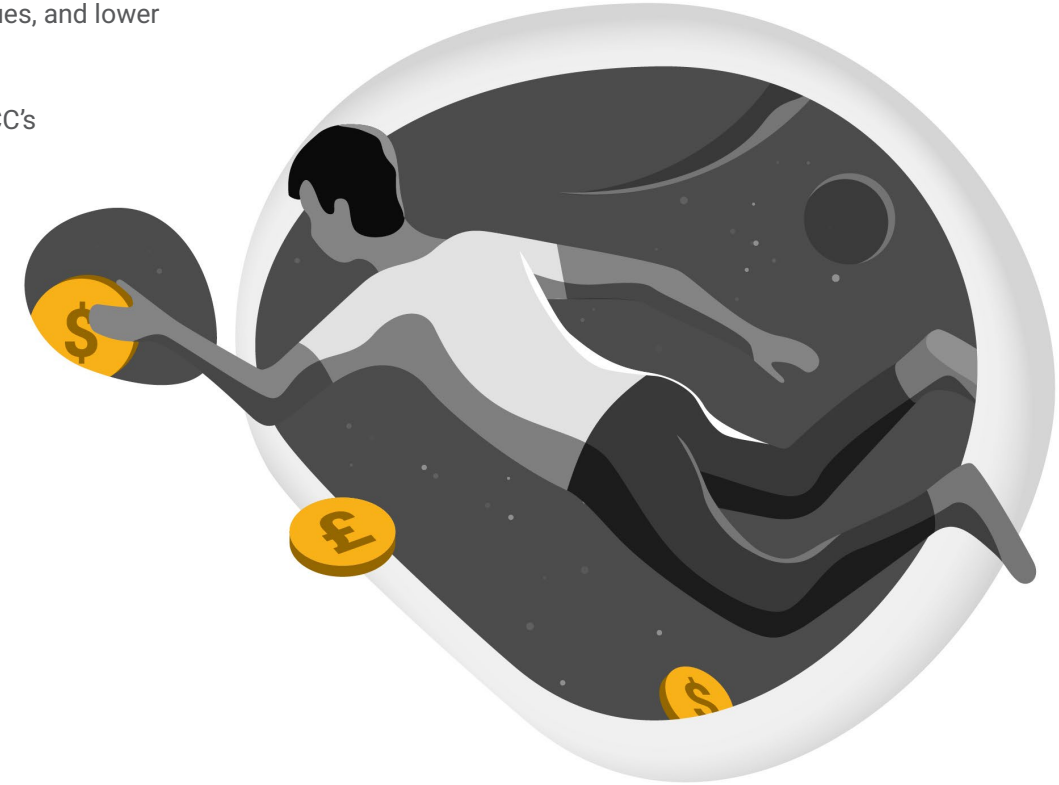
Funding the future

With financial support from government at their disposal, ISPs have made considerable progress towards universal access. The remaining gaps have become a public policy priority on both sides of the Atlantic.

It is easy to understand why. According to researchers at the Federal Reserve Bank of Richmond, broadband access and adoption in rural areas is linked to increased job and population growth, higher rates of new business formation and home values, and lower unemployment rates .

In its efforts to expand broadband provision to under-served areas, the FCC's Universal Service Fund has committed $9.2 billion of funding to US service providers over the next 10 years, via reverse auction. A second phase auction, the timeframe for which has yet to be determined, may allocate an additional $11.2 billion.

The total cost of expanding US fiber broadband networks, however, has been estimated at around $80 billion.



Consequently, President Biden's Infrastructure Bill has promised a $65 billion investment in broadband infrastructure, of which $42 billion will be allocated in grants to states and tribal governments.

All the while, to help bridge the divide in the UK – and overcome the budget, and return-on-investment restrictions facing ISPs – the government has committed to investing £5 billion to support the roll out full-fiber broadband across the country.

Some £1.2 billion of this 'Project Gigabit' funding has been set aside for the years 2020–2025, with providers bidding for available contracts in select locations. The remaining £3.8 billion is reserved for future years.

The government is also providing up to £210 million of voucher funding to cover the costs of installing gigabit broadband to the doorsteps of homes and businesses. The scheme means rural areas will not have to wait for supplier contracts, under Project Gigabit, to reach them.

Ensuring you receive the service you expect

Even where broad government targets are met, there will continue to be many instances of service outage, congestion, and unreliable performance.

The vagaries of installation quality and service reliability will almost certainly affect businesses and day-to-day performance. Just because your service provider says you can get 100 Mbps, it doesn't mean you get this 24/7, and when you need it.

By continuously monitoring and measuring your internet service, you can improve your chances and know for sure exactly what you're getting.

This is easily and affordably achieved for any business or personal user. You don't have to be a 'techy' or understand the nuances of TCP and IP. You can simply connect a monitoring device to your network and set it to continuously measure and report on your service performance.

A performance measurement agent from Epitiro, for example, connects to your network the same way your mobile phone, laptop, or tablet does. It samples the speed and performance of your internet service and lets you know, at all times, how your network is performing. You don't even have to be there. You can view and receive reports from any location on any connected browser.

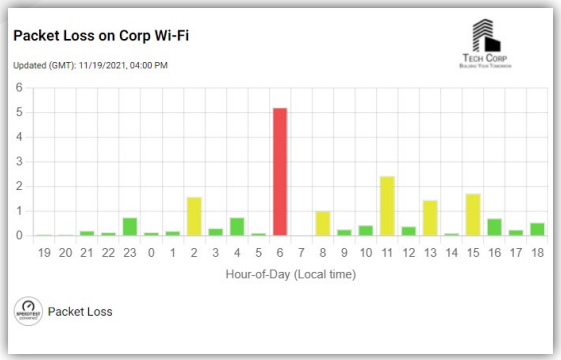
What makes Epitiro different is the ease of use and low-cost. Whether you're a Fortune 500 company, an independent coffee shop, or a home user – affordable internet performance monitoring is at your fingertips.

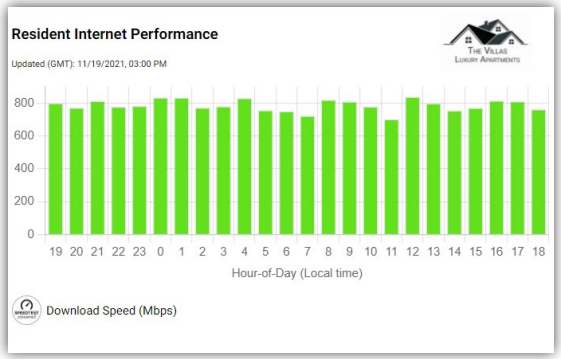
Buy an agent (from $199), plug it in and monitor your internet. There's a free hosted service for essential performance measurement and reporting. If you need to customize your testing and switch from network to network, or perform remote troubleshooting and data integration there's a service plan, for a few dollars a month, that delivers it.

Measure and monitor what matters to you

Sometimes service performance, such as high-speed or low latency, matters. For other customers, reliable always-on service is more important than speed.

Some businesses may rely heavily on a particular type of service, mobile payment from a particular provider, for example. Having the ability to customize what you measure, and when you measure it, can be critical to closing the digital divide for you or your business.

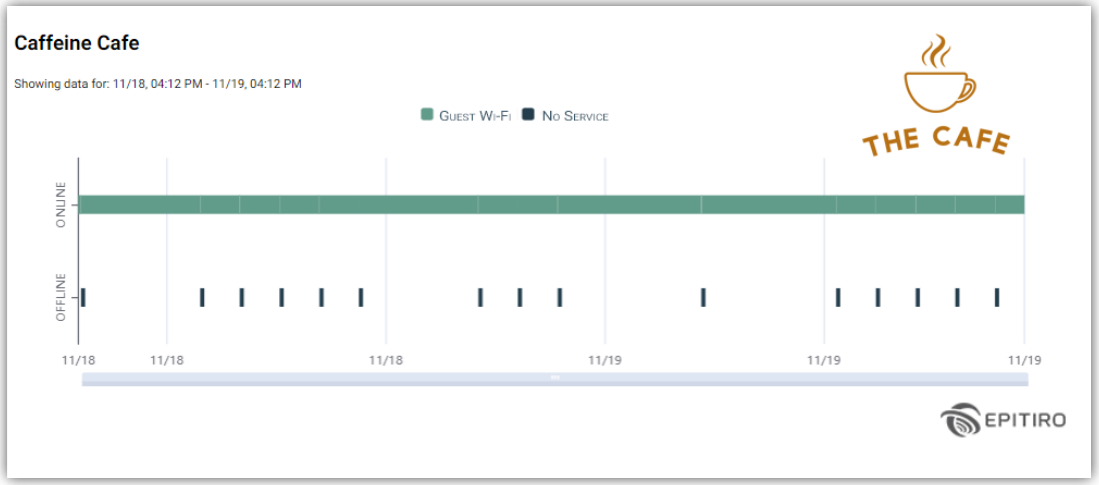




Using a system that allows you to test any end point or service, measure speed and performance as well as reliability and availability of service, can be essential. Epitiro allows you to fully customize the things you measure and test. Furthermore, it enables you to test periodically on any cadence or test at specific times of the day, when you usually experience issues, for example.

Share performance results at the click of a button

It's important to be on the same page with your service provider and other stakeholders. With the Epitiro Sharable Content capability, you can let your customers, your service provider and government regulators all see how good (or not so good) your internet performance really is.



Example of unreliable internet service throughout the day

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