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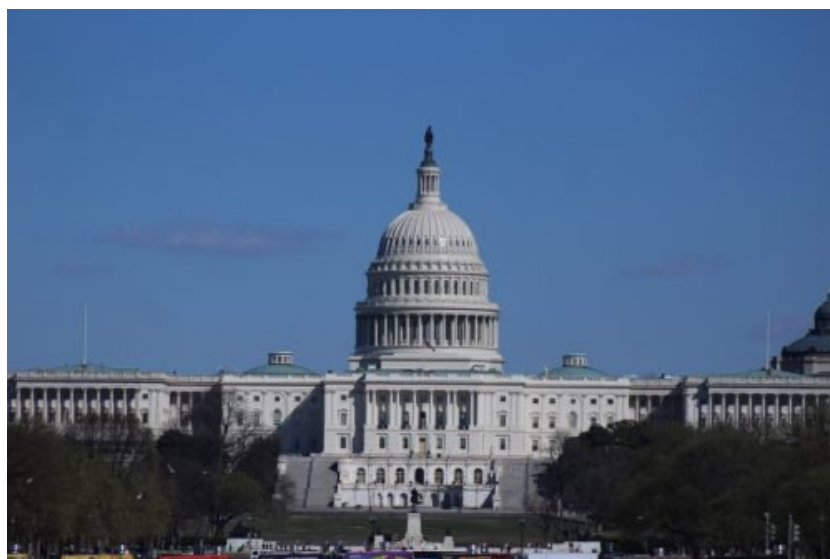
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## **Prioritization: Moving past prejudice to make internet policy based on fact**

Technology and Innovation, Telecommunications



The internet has evolved from its original design as a backbone-oriented, end-to-end infrastructure for academics to a [series of content delivery networks \(CDNs\) that deliver video entertainment](#) for end users. About [80 percent of today's internet's traffic](#) is driven by the business models of Google, Amazon, and Netflix, companies that are both networks and applications undergirded by massive data centers and private networks. While their success underscores their [business prowess](#) and compelling content, today's de facto result is not what the internet's architects had in mind. Had they anticipated that video would be the main use, they would have selected a different network design.



Via Twenty20

The Federal Communications Commission's (FCC) [2015 Open Internet Order](#) made a blanket ban on something it called “paid prioritization,” or “the management of a broadband provider’s network to directly or indirectly favor some traffic over other traffic.” The implication is that internet service providers (ISPs) can “speed up” traffic, but this is not possible because packets cannot be retransmitted by a network any faster than it receives them. The FCC failed to cite real-world examples of the practice or evidence proving its harm. Within network engineering, prioritization refers to scheduling and queuing technologies, which could be envisioned as a bike path and a walking path. If some traffic uses the bike path, it does not disadvantage the walking path traffic. However, the question remains whether the FCC banning the bike path altogether disadvantaged some services, as Voice over Internet Protocol (VOIP) co-founder Dan Berninger notes in his [petition](#) at the Supreme Court. While CDNs perform a service that amounts to paid prioritization, hosting content close to users to shorten the distance it travels for a fee, leading CDN provider Akamai succeeded in its effort to carve out its services from regulation, as the order’s footnotes attest.

Today’s House Energy and Commerce Committee [hearing](#), led by Rep. Marsha Blackburn (R-TN), is a step toward addressing the wrongs of the Open Internet Order by [removing its incentives for arbitrage](#) and ensuring that specific measures regulating network capabilities (e.g., prioritization) are based in science and engineering. Here are some key points paraphrased from the [submitted testimony](#) of today’s witnesses.

### **Richard Bennett:**

While 80 percent of the bandwidth is consumed by a few giant players (which essentially don’t contribute to the cost of last mile networks), a diverse pool of users and applications compete for access to critical network resources such as bandwidth, latency, packet loss, and jitter. New networking product lines such as WAN edge infrastructure, software defined networking, and managed services overcome shortcomings in the internet’s design by enabling dynamic routing or path selection. These devices enable the internet to replace costly private lines for many enterprise applications. ISPs can do the best job of traffic optimization when they can identify the nature and requirements of individual packet streams. The most effective way to do this — while preserving privacy — is to allow application developers to register applications requiring special treatment and even to pay for such treatment in some circumstances. While the average speed of US broadband networks has increased 35 percent per year for a decade, web performance has remained stagnant, even decreasing in 2016. The interests of innovators are best served when they are able to purchase the network services they need without undertaking the breathtaking expense of building the networks of data centers owned by the five largest US firms.

### **Peter Rysavy:**

5G, the next and fifth generation mobile wireless standard, is new network typology and architecture designed to handle different kinds of traffic flows and a wider range of use cases than 3G and 4G. These include autonomous vehicles with crash sensing and mitigation, health biometric sensing and response, telemedicine, and proactive monitoring of critical physical infrastructure such as transmission lines. These applications require minimal delay and high reliability, and this can't be guaranteed without prioritization. Importantly, prioritization increases the quality of experience across the subscriber base — however, bright-line rules against prioritization will deter service development and investment incentives, threatening and undermining America's leadership in 5G.

### **Paul W. Schroeder, [Aira Tech Corp](#):**

Aira helps the visually impaired enjoy a level playing field with those who can see by leveraging the capabilities of emerging 5G networks. It offers its blind customers instant, next generation wireless access to visual information through smart glasses, augmented reality, machine learning, geolocation, sensors, and trained human agents. Aira won't work with best efforts as it requires a robust network with dependable connectivity. Aira employs [AT&T's Dynamic Traffic Management solution](#) to ensure users low latency and robust connectivity for the transmission of streaming video. Aira's customers or "explorers" use it to navigate city streets and airports, review printed material, catch public transportation, and get real-time assistance for job applications, shopping, and travel.

### **Claims against prioritization and the counterarguments**

Witness and Free Press Policy Director Matt Wood's testimony was not available at the time of writing, but advocates against prioritization counter that the 2015 order had carve outs for telemedicine, suggesting that it preserved the "good" uses cases for prioritization. But it's not logical that only telemedicine should be able to enjoy unrestrained innovation while other apps for transportation, supply chain, public safety, and so on would be denied. Such technologies, whether purchased by consumers or companies, can ensure users, for example, a quality video signal during an online job interview when the network is congested or the prioritization of public safety signals during emergencies.

A second claim is that innovative services will never be delivered on the public internet because developers will opt for private networks. Such an option is prohibitively expensive, would increase the cost for end users, and deter innovative service adoption. Moreover, it's inefficient to build separate networks when the public internet can offer these services the capabilities they need.

The use of prioritization will no more slow the internet than the use of FedEx slows the mail. Indeed Amazon avails its Amazon Prime customers to priority delivery via the United States Postal Service.

None of America's key competitors in 5G — Japan, South Korea, or China — have adopted bans on paid prioritization. They would not be so stupid to handicap their citizens and innovators with rules that constrain an advanced network's capability.

The US now faces a global competition for 5G leadership and can't afford to be captured by emotional calls to imaginary harms. The committee is taking forthright, evidence-based leadership in making policy and investigating the facts before making up rules. It's a standard that all regulatory agencies [should adopt](#).

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**Learn more:** [Paid prioritization: Debunking the myth of fast and slow lanes](#)

(<http://www.aei.org/publication/paid-prioritization-debunking-the-myth-of-fast-and-slow-lanes/>)

| [States join the net neutrality #resistance: Will it make a difference?](#)

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[Federal Communications Commission \(FCC\)](#), [Net neutrality](#), [Regulation](#), [Telecommunications](#)