

Barbara van Schewick  
Professor of Law and (by courtesy) Electrical Engineering  
Director, Center for Internet and Society  
Stanford Law School

**NET NEUTRALITY AND ZERO-RATING:  
Oral Testimony at the  
CRTC's Hearing on Differential Pricing Practices Related to Internet Data Plans,  
November 4, 2016**

Mr. Chairman, Commissioners,

Thank you for inviting me to testify today. My name is Barbara van Schewick. I'm a Professor at Stanford Law School and the Director of the Center for Internet and Society there; I also have a courtesy appointment at Stanford's Electrical Engineering Department. I have a PhD in computer science and a law degree. I'm here as an independent academic whose research for the past 16 years has focused on the relationship between Internet architecture, innovation and regulation. The FCC's 2010 and 2015 Open Internet Rules relied heavily on my work. My work also informed TRAI's 2016 Order on zero-rating and the European Union's recently adopted guidelines implementing the European Union's net neutrality law.

The Internet has become the critical infrastructure of our time – for our daily life, for our economy, for our democracy. In this proceeding, the CRTC will decide whether the Canadian Internet can continue to serve as a platform for free speech, innovation, and economic growth.

Zero-rating is the practice of exempting an app from a user's monthly data plans. An application that is zero-rated does not count against a user's data cap while all other applications continue to count against the cap. In today's testimony, I will focus on zero-rating, but my proposal applies to all forms of differential pricing.

**How should we think about zero-rating in the context of net neutrality?**

Just like technical discrimination that slows down applications or speeds up others, zero-rating makes some applications more attractive to people than others. It's just another tool that allows ISPs to favor some applications over others.

As a result, zero-rating has the same effect as technical forms of discrimination and creates the same problems for the open Internet. That means a net neutrality regime that only addresses technical discrimination without also addressing zero-rating is fundamentally incomplete.

Data shows that zero-rating has a powerful effect on user behavior.

First, research shows that people strongly prefer zero-rated content over content that counts against their cap. In a survey by the US Wireless Trade Association CTIA, 74% of users said that they would be more likely to watch videos offered by a new provider if the content did not count against

their data caps. In another study, the online magazine Slate told some users that a podcast didn't count against their cap. People who were offered the zero-rated podcast were 61% more likely to click on the link.

This is not surprising. Numerous studies show that many consumers are wary of going over their cap, because doing so can result in steep fees or slow their connection to a crawl. Consumers are often unaware of how much data they have left in a month or how much data a specific service uses, so the safer option is to access services that don't count against their cap.

The result: consumers will prefer zero-rated content over content that eats up their data – not because of its merits, but because it is included in a zero-rating program.

Second, many zero-rated plans directly limit user choice. For example, T-Mobile's Binge On program allows customers to stream "unlimited" video from select video providers included in the program. Customers on the lowest qualifying plan with a 3G cap can watch as much as video as they want from Netflix and other providers in the program. But they can only watch 4 ½ hours per month, or 9 minutes per day, from providers that are not in the program – and that's only if they only watch video and don't do anything else online. Now, unlimited video versus 9 minutes per day is not a meaningful choice. It also makes it impossible for providers that are not zero-rated to compete.

This is not an isolated example. In the European Union, many ISPs zero-rate their own video applications. Customers on these plans can watch unlimited zero-rated videos, but their bandwidth caps prevent them from watching more than 2–5 hours of video unaffiliated with the ISPs.

What is the result? Zero-rating has the same impact on the open Internet as technical forms of discrimination and creates the same problems. Thus, if the CRTC wants to protect the open Internet in Canada, it has to adopt rules banning harmful forms of differential pricing as well.

### **What should these rules look like?**

Zero-rating and other forms of differential pricing constitute discrimination under Section 27(2) of the Canadian Telecommunications Act.

How should regulators determine which of these practices are unjust, undue, or unreasonable?

The CRTC should evaluate these practices based on their impact on the values that net neutrality rules are designed to protect:

- whether they preserve the Internet's ability to serve as a platform for competition, innovation, and economic growth;
- whether they preserve user choice; and
- whether they preserve the Internet's ability to improve democratic discourse, facilitate political organization and action, and provide a more decentralized environment for social, cultural and political interaction in which anybody can participate.

Competition law principles do not accurately capture these concerns.

How should you do that?

We just saw that zero-rating has the same effect as technical discrimination. That means zero-rating and differential pricing are not something new that requires a completely new way of thinking. Instead, we can rely on policy analysis and available evidence regarding technical forms of discrimination.

Like different forms of technical discrimination, different forms of zero-rating pose different problems and should be evaluated separately.

There are four forms of zero-rating:

- zero-rating in exchange for payment from edge providers;
- zero-rating some apps, but not other similar apps (without payment from edge providers);
- zero-rating that is open to a whole class of apps (without payment from edge providers); and
- application-agnostic zero-rating (without payment from edge providers).

The first two are clearly harmful and should be prohibited.

The third seems less harmful, but still violates key net neutrality principles necessary to preserve Internet openness and should be prohibited.

The fourth should be allowed under a net neutrality regime.

CRTC can and should do so through ex ante, bright-line rules.

### **Category 1: Zero-rating in exchange for payment from edge providers**

First, an ISP zero-rates applications that pay for the privilege. This is sometimes called “sponsored data.” For example, in the US, AT&T and Verizon allow application providers to pay to be zero-rated. Their programs are open to any application that is willing to pay.

These plans create the same problems as allowing application providers to pay for fast lanes or other forms of technical preferential treatment - a practice that is prohibited by net neutrality rules in the US and Europe.

When they offer sponsored data plans, ISPs use their position as a gatekeeper to their subscribers to put up a toll booth. Edge providers that pay get a competitive advantage. Anybody who can't afford to pay the fees will find it harder to compete or be heard. This tilts the Internet in favor of companies and speakers with deep pockets, harming start-up innovation, all sectors of the economy, and free expression.

First, sponsored data plans harm start-up innovation.

On the Internet, the costs of innovation have been incredibly low, and entrepreneurs don't need massive upfront funding or permission to pursue their ideas. Allowing sponsored data would change that.

If established companies can pay to be zero-rated, then those who can't afford the extra fees will find it hard to compete. As we know from the FCC's Open Internet Proceeding, start-ups and small businesses don't have money to pay for fast lanes. They don't have money to pay for zero-rating, either.

Innovation as we know it would suffer. That student working on bright idea in a dorm room doesn't have a chance.

The consequences of that loss would be severe. Innovators with little or no outside funding have produced some of the most important sites – such as Google, Facebook, Yahoo, and eBay. Economic research suggests that innovators with little or no outside funding will continue to be important sources of innovation – if we let them.

Second, sponsored data would harm all sectors of the economy. Today, almost every company is an Internet company. Large corporations that pay to be zero-rated will have higher costs, so customers will be forced to pay higher prices for their products and services. Small businesses that rely on the Internet to reach their customers will find it harder to compete.

Many small businesses in Canada are just starting to take advantage of the opportunities that the Internet has to offer. They should have the same opportunity to benefit from an Open Internet as larger corporations.

Finally, allowing sponsored data would harm free expression and democratic discourse. Today, the open Internet is a space where all Canadians, no matter the color of their skin or the size of their wallets, have an equal opportunity to create, connect, and organize online.

By contrast, sponsored data plans create two classes of speakers: Those who can pay to be zero-rated, and those that can't afford to do so. This includes non-profits, educators, artists, musicians, writers, activists, faith groups, NGOs, and everyday Canadians. They will find it harder to be heard or find an audience for their creative works.

Thus, if we allow ISPs to increase the costs of speech through sponsored data plans, we risk losing this critical space for democratic discourse, political action, and creative expression.

In sum, allowing ISPs to charge for zero-rating creates the same harms to innovation, the economy, and free speech as allowing ISPs to charge for fast lanes and should be prohibited.

**Category 2: Zero-rating some apps, but not other similar apps (without payment from edge providers)**

Second, an ISP zero-rates some applications in a class of similar applications. The ISP selects who is zero-rated, but those that are zero-rated don't have to pay for the privilege.

For example, in the US, Comcast zero-rates its own online video service Stream TV, but not other, competing video services like Netflix or Hulu. T-Mobile zero-rates Pokemon Go, but not other online games. Many European ISPs zero-rate their own online video or cloud-storage apps. ISPs in Latin America often zero-rate the top three social networking apps, or the top five online

messaging apps. Thus, it doesn't matter whether the ISP zero-rates its own app or that of a third-party.

This creates the same problems as ISPs slowing down or speeding up some apps but not others – practices that are prohibited by net neutrality rules in the US and Europe. Zero-rating only some applications in a class directly distorts competition among apps in that class. This form of zero-rating is a textbook example of an ISP using its position as a gatekeeper to pick winners and losers online.

This creates huge problems for competition, innovation, and free speech. Even if the ISP is zero-rating other companies' services, it is likely to pick the biggest, most popular services. This cements those companies' position at the top and prevents real competition from innovative startups. Would Facebook exist today if Myspace had been zero-rated?

The same is true for speech. Allowing ISPs to zero-rate selected content gives them the power to drive us towards certain voices and away from others, harming our culture and our democracy. If ISPs select whom to zero-rate, they are likely to pick popular content that appeals to the mainstream – not underrepresented or marginalized voices. ISPs should not have the power to determine whose voice is worthy of being heard, and whose is not.

For these reasons, zero-rating only some apps in a class, but not others should be prohibited.

**Category 3: Zero-rating that is open to a whole class of apps (without payment from edge providers)**

Third, an ISP's zero-rating program is open to all applications in a certain category; apps don't have to pay a fee to be included. For example, T-Mobile's Binge On program in the US is open to all video providers that meet its technical requirements. T-Mobile offers a similar program for music streaming. Because the program is open to all apps in a class and providers don't have to pay to join, it seems less harmful than the first two forms of zero-rating.

However, the technical requirements to join these programs are substantial. Take T-Mobile's Binge On: The program's requirements discriminate against providers that use innovative protocols and against providers that use encryption and other technologies. Such requirements make it difficult for many start-ups, small players, and non-commercial speakers to join, creating lasting harms to innovation, competition, and free speech online.

These concerns are not hypothetical: T-Mobile's other zero-rating program, Music Freedom, creates similar harms to competition and innovation. As with Binge On, T-Mobile opened Music Freedom to all music streaming services when it launched in 2014. Today the program has grown from 7 to 44 providers, but still only includes a fraction of the more than 2,000 licensed online radio streaming services in the US. Some smaller services had to wait 1½ years to be included; some never heard back from T-Mobile at all. In the 3 months before I published my report on Binge On in January 2016, Twitter users asked T-Mobile to add at least 109 music streaming providers that are not yet part of the program. The program has created lasting barriers for small players, non-commercial providers, and start-ups.

Moreover, by limiting Binge On to video providers only, the program favors video as a class over all other classes of applications. Just like technical discrimination that discriminates among classes of applications, this distorts competition among classes of applications and limits user choice.

For these reasons, the CRTC's rules should explicitly prohibit ISPs from zero-rating all applications in a class of similar applications without charging the providers of the zero-rated application.

**Finally, all of these plans have fundamental effects.**

**These zero-rating plans change innovation on the Internet as we know it.**

Until now, innovators could reach people all over the world at low costs. All they had to do was develop an application and put it online. But these zero-rating programs require innovators to negotiate with ISPs around the globe and potentially, make changes to their application and create different versions of their applications for different carriers – all for an equal chance to compete.

The result: these zero-rating plans increase the costs of application innovation and end the era where entrepreneurs are free to “innovate without permission” – a core net neutrality principle that has fostered innovation up until now.

Large providers that are able to manage the burden will be able to join multiple zero-rating programs. But small players that don't have the resources to work with every ISP will be left behind. This includes start-ups, small businesses, and non-commercial speakers. As a result, the proliferation of zero-rating programs would seriously distort competition, reinforcing the competitive advantage of established providers.

**Zero-rating puts carriers in control of our Internet experience.**

In today's internet, we – the people who use the internet – are in control of our internet experience. Our internet provider sells us bandwidth, but how we use that bandwidth is up to us. In that way, the internet is like electricity.

Electricity companies are not supposed to tell people how to use their electricity or make some uses more attractive than others. They cannot offer unlimited electricity to power particular products, such as Apple TV or even all televisions, while charging for electricity to power light bulbs and fridges. Similarly, carriers are not supposed to restrict or influence how people use the bandwidth they purchase. Zero-rating changes that.

**Zero-rating harms consumers in other ways, too. Zero-rating creates an incentive for carriers to keep data caps low.**

The lower the bandwidth caps, the more attractive zero-rated apps become. Thus, ISPs have an incentive to keep bandwidth caps low in order to motivate providers to pay to join their zero-rating programs. ISPs also have an incentive to increase the price of unrestricted bandwidth for the same reasons.

This effect can already be seen in Europe. As Digital Fuel Monitor has shown, ISPs that zero-rate their own apps have either reduced data caps or increased the price of unrestricted bandwidth for their customers. In Europe, mobile carriers that zero-rate video offer half as much data volume for the same price as carriers that do not.

This creates a problem for both consumers and application providers. Consumers have less bandwidth for applications that are not zero-rated. And application providers that are not zero-rated have a lasting competitive disadvantage.

By contrast, shortly after the Dutch regulator prohibited zero-rating, the telecom company KPN doubled its monthly bandwidth cap for mobile internet access at no additional cost.

**There are some net neutrality-friendly forms of zero-rating.**

Application-agnostic differential pricing practices, including application-agnostic zero-rating, that do not require application providers to pay for zero-rating do raise not any of the concerns discussed above.

Application-agnostic practices are practices that do not make distinctions among applications or classes of applications.

Some of these practices have already been discussed this week.

For example, carriers could offer customers an option to access zero-rated content in times of low traffic, say 11pm to 6am.

But there are others: For example, T-Mobile could offer customers a zero-rated low-bandwidth mode at the same speed as Binge On. Use of that mode would not count against the cap, but customers would be able to use this mode however way they choose: They could watch video or do anything else online.

Allowing these practices would still allow ISPs to differentiate themselves or make Internet access more affordable, but without compromising application innovation, user choice, or the Internet's economic, social, cultural, and political potential.

\* \* \*

Today, the Internet is a space where every Canadian has an equal chance of reaching people online. It's a space where users, not ISPs, determine who is successful in our democracy, our culture, and our economy. I hope the CRTC will keep it that way.

Thank you for your attention, and I'm looking forward to your questions.