

DWCC et al.'s Response to Q3 Throttling Data Replies

This document from DWCC et al. focuses on the query regarding throttling coming from CRTC's RFI Question 3.

Introduction

1. DWCC et al. are still concerned about the network management of data usage over a wireless connection. It impedes communication between two-way video conversations or discussions. We believe an ethical question to be answered: would wireless companies ever consider throttling voice calling? Why is it acceptable to consider throttling video calls?
2. Having audio garbled or dropped from calls, how does that feel? This situation is equivalent to video calls being pixelated and blurry caused by throttled networking by the companies.
3. As we are on the technical aspect of data communication over networks, we will touch on specialized hi-tech concepts for wireless video communications.
4. DWCC et al. have, over and over again, been trying to explain how the use of video is different from voice calls over a network, and this time we try to explain it technically. CRTC needs to consider these technical specifications in the policy determinations when considering how throttling impacts video communications.

Technical Considerations

5. With the Deaf, Deaf-Blind and Hard of hearing wireless customers' reliance on video for communications, video quality and network speeds must be considered, so clear and smooth communication is on a wireless connection. It is critical to do this the right way so that people who use sign language can be prepared when **the 5th generation mobile network is** available in the near future. CRTC must ensure that the network is ready and accessible to sign language users.
6. CRTC and the wireless service providers need to consider the two-way download and upload speeds. Consideration for video quality and optimum network speed

Video quality

7. DWCC et al. remind that the following is critical for video quality, low latency levels, jitter and packet loss are essential for ensuring access to high-quality wireless connections. And as we turn to wireless communications, just as explained in **Telecom Regulatory Policy 2016-496**: "the significance of these service characteristics is best illustrated in the requirement for real-time communications services, particularly videoconferencing-type services such as telemedicine (e.g. remote surgery) and Video Relay Service (VRS)."

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8. For wireless communications, the latency, jitter, packet loss differ. The acceptable minimums are: a latency of up to 10 milliseconds (ms) is good, jitter must be below 30ms, and packet loss should be less than 1%.
9. Additionally, all participating in this public proceeding, including CRTC and the wireless service providers, need to remember that current standards for bandwidth may fit for video streaming, which is one way and means downloading videos, i.e. streaming and playing movies, currently would not work for two-way calling.
10. DWCC et al. would like to clarify that standards would differ for video calling, and according to SRV Canada VRS Tech Support provided by Ivés¹, for effective video communications, the acceptable standard is 5 Mbps for downloading and 5 Mbps for uploading to your device.

Video resolution

11. Consideration must be made for the higher quality of smartphones and video pixelation use over the wireless connection. The vertical screen resolution has a direct impact on data communication. *The data difference between video streaming (one-way) and video calling (two-way) between 360p standard definition and 1080p high definition is significant.*² Video resolution is now standard at both 720p and 1080p. With the newer smartphones, the video resolution is higher. Therefore, this also increases the amount of data over the network. Several resources explain this at length regarding newer smartphones such as iPhones.³ ⁴ Video communication travels in bigger kbps over the network and impacts the amount of data the wireless consumer is using per month. The data difference between 360p standard definition and 1080p high definition is significant, with HD calls consuming two to four times as much bandwidth as SD calls.⁵
12. If you compare voice and video communications, the standard definition is voice, and the high definition is video.
13. "Most video call apps use a minimum of about 500 kbps (3.75 MB/minute) for one-way standard definition calls and a maximum of around 1.8 Mbps (13.5 MB/s) for one-way high-definition video. Doubling those to account for the two-way flow, that's a total of 7.25 MB/minute minimum, 27 MB/minute maximum."⁶

¹ Personal written communication Aghani Z., Ives SRV Canada Tech Support, January 2022

² MakeTechEasier: How much Bandwith does Videocalling Use? - [link](#)

³ The Verge: If You have an older iPhone - Facetime HD - [link](#)

⁴ MacRumors: iOs quietly added FaceTime Support to its iPhones - [link](#)

⁵ MakeTechEasier: How much Bandwith does Videocalling Use? - [link](#)

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Video Quality	144p	240p	360p	480p	720p	1080p
Per minute	1.3MB	3.3MB	5MB	8.3MB	25MB	50MB
Per hour	80MB	200MB	300MB	500MB	1.5GB	3GB

14. As a result, one two-way standard (SD) video call at 7.25MB/min would consume 500MB per hour, and for a two-way high-definition 1080p (HD) video call = 27 MB/min would amount to a 3GB per hour consumption.
15. Throttling video on the wireless network for sign language users is akin to discrimination, and CRTC needs to make sure that this does not happen at all. Not even once. There is just too much risk. The companies cannot purposefully blur video communications when the person has reached the limit, and when this takes place, it can impact 9-1-1 calls even if the person is talking, using sign language, to another person on the phone, i.e. a family member amid an emergency.

DWCC et al. Analysis

16. The companies appear to have referenced their answers incorrectly, focusing on zero-rating, which applies to Question 4. This pattern is what we have noted:
- Telus comments that their "zero-rated traffic is not throttled," which references only to the Video Relay Services access, and it should not be;
 - Bell similarly references zero-rating of VRS;
 - Rogers comments that "We specifically do not support the proposed remedy to require that WSPs "not throttle the data service of these customers below a specific speed threshold";
 - Shaw states: "Our data throttling ITMP does not present people with disabilities with an undue or unreasonable disadvantage. We apply this practice to our entire user base to help ensure consistent and reliable service."
 - SaskTel "currently offers wireless service plans that offer throttled speeds of 2 Mbps for both upload and download once users reach their predetermined soft caps." These speeds exceed the minimum thresholds provided by SRV Canada VRS for high-quality VRS calling.
 - Videotron "believes that any regulatory action that would prohibit WSPs from limiting the speed of data service to customers subscribed to accessibility plans would be unjustifiable."

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DWCC et al. Position

17. DWCC et al. agree with Videotron with their offering of a solution. They write: "one possibility would be to order WSPs to ensure that the allocation of data at full speed for customers subscribed to accessibility packages is higher than that allocated to customers subscribed to equivalent packages offered to the general population." This suggestion is precisely what accessibility groups have been long advocating.
18. Further to this, Videotron explains, " in this case, full-speed data allocation for customers subscribed to accessibility packages should be set at a level that adequately accommodates the needs of that community while preventing a limited number of customers using the WSP network excessively." In other words, those with accessibility plans are allocated **sufficiently** these full-speed data allocations.
19. DWCC et al. refer to our comments above. In our interventions regarding the requirements, we believe it necessary to prove that the current values of the wireless service providers are not consistent with the needs of our DDBHH consumers and others. They require higher video calling and accessibility (i.e. way-finding) application standards. For the blind they need more data to access iOS Voiceover, Google's TalkBack, [Be My Eyes](#), or [AIRA](#), which is a visual interpreting and guidance app. Guides watch through the wireless smartphones' video camera and help guide the Blind around. Thus it is not only DDBHH that need the extra data, but also the Blind for similar apps. This further evidences that throttling and impeding these apps will impact Canadian persons with disabilities telecommunications using the wireless networks.
20. DWCC et al. ask that the wireless service providers and CRTC strongly consider working with consumer groups and accessibility experts who are DDBHH and persons with disabilities to find workable solutions. Many Deaf-run technology consultants are waiting and eager to improve the industry = a win/win situation that would put Canada on the map, meeting the goals of the Accessible Canada Act.
21. As our August 27, 2021 interventions described, even with the supplement of screenshots, the concern is that when the limits are reached, the throttling of reducing high-speed wireless connection down to slower speeds (when the customer has to pay more for a higher rate) impacts the video communication. It is when discrimination takes place, as it impedes the communication between two sign language wireless consumers with the throttling and network management that takes place.
22. In light of the *Accessible Canada Act*, the CRTC needs to ensure that these speed limits and pay-for higher-speed passes are removed for those identified through the accessibility plans, not just through the SRV Canada VRS app. Throttling must never take place where it impacts a Canadian with accessibility needs.

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