

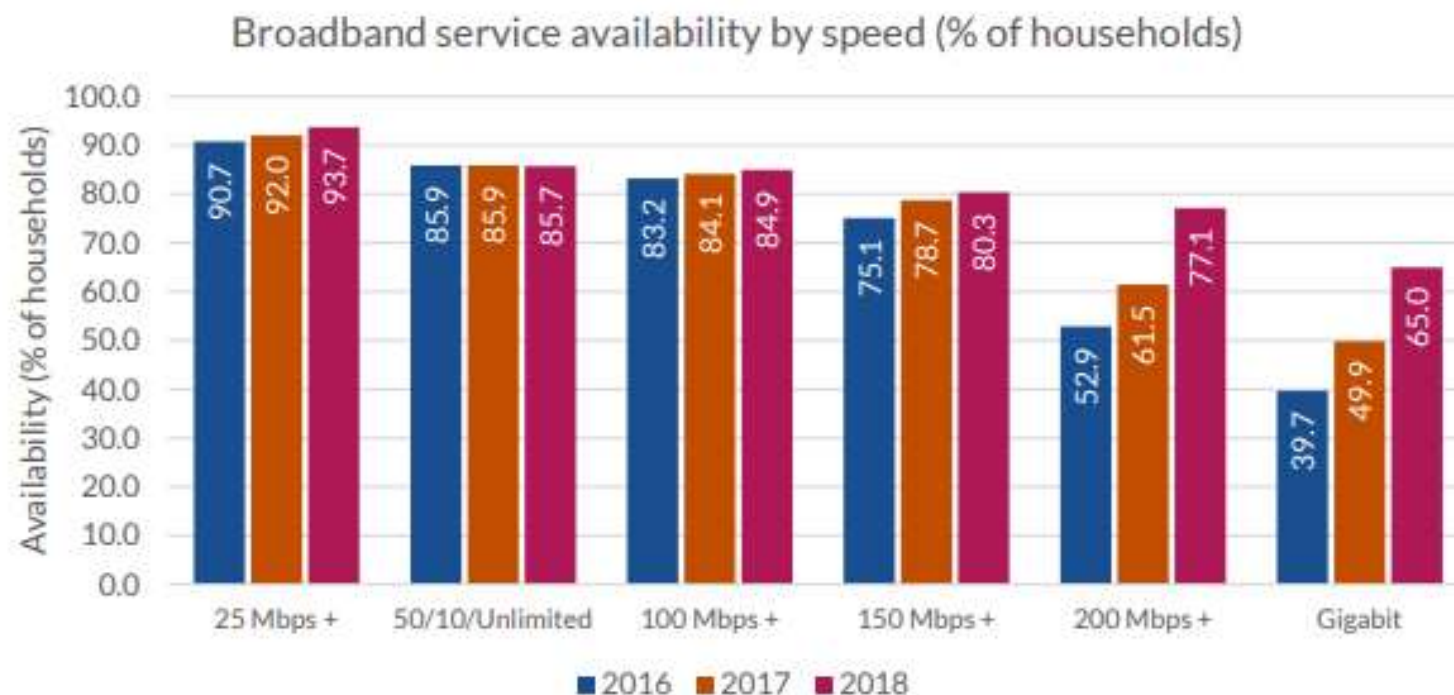


Wi-Fi 6: Are you ready?

March 2021

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Canadians subscribing to faster Internet services



Weighted average download speed of residential subscriptions grew by 88.9% from 2017 to 2018 to reach **126.0 Mbps**.

Proportion of 100 Mbps or faster connections; **up more than ten times** (from 2.6% in 2014 to 33.1% in 2018).

Less than a third of subscriptions for less than 16 Mbps in 2018.

Source: CRTC; <https://crtc.gc.ca/pubs/cmr2019-en.pdf>

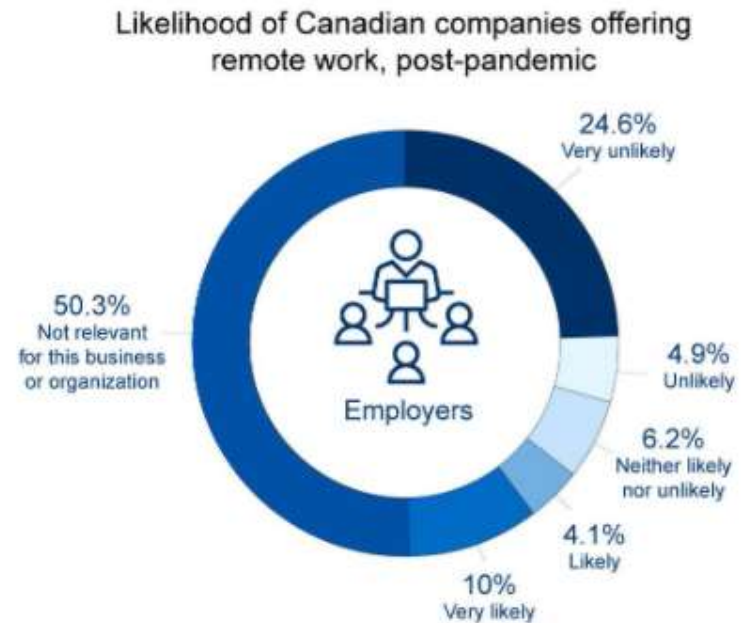
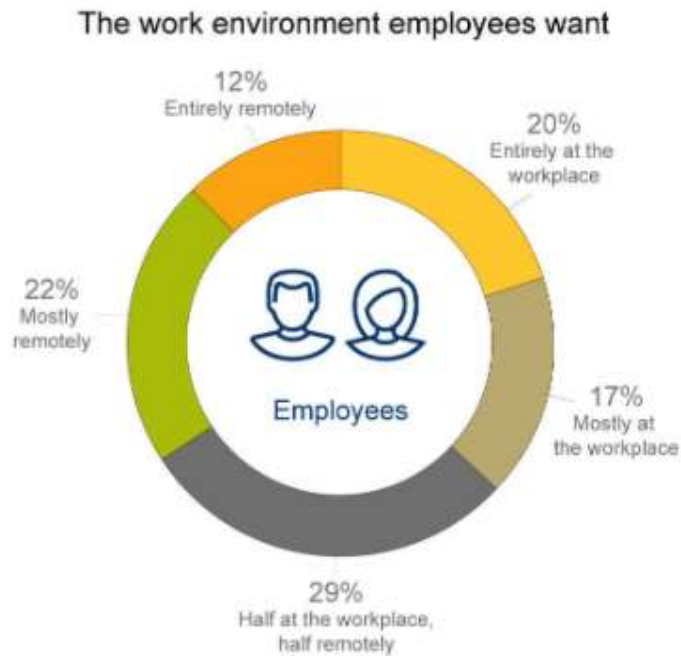


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Canadians working from home more

63% of Canadians expect to work **mostly/entirely remotely** from now on.

14% of Canadian employers are **likely/very likely** to offer this option.



Source: Statistics Canada, PwC, RBC Economics; <https://thoughtleadership.rbc.com/navigating-2021-21-charts-for-the-year-ahead/>



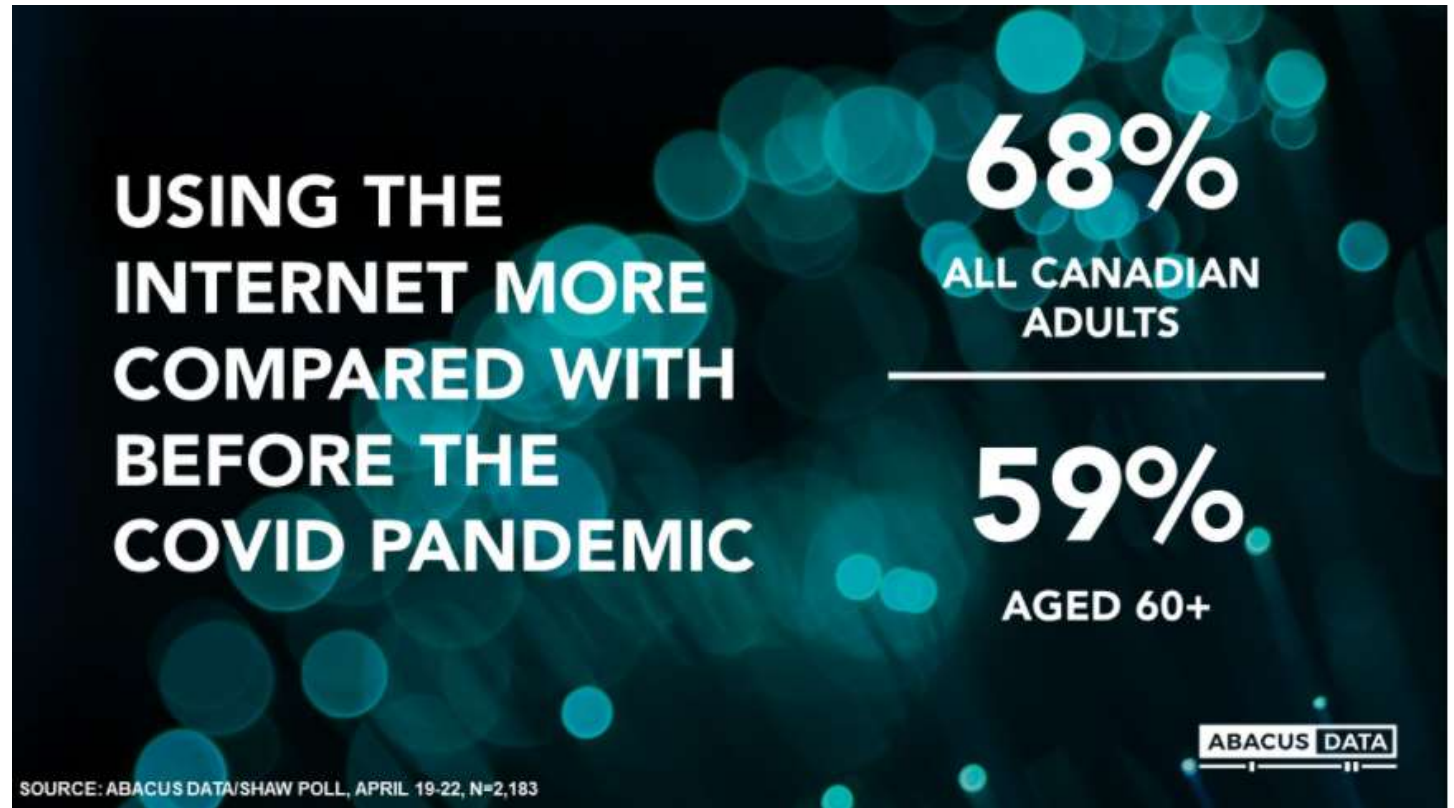
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Canadians using the internet more

Nearly 7 in 10 of Canadians report using the Internet more now than before the pandemic.

27% (about 8.1 million), say they are using the Internet **much more** than usual.

41% report 3 hours or more of screen time daily.



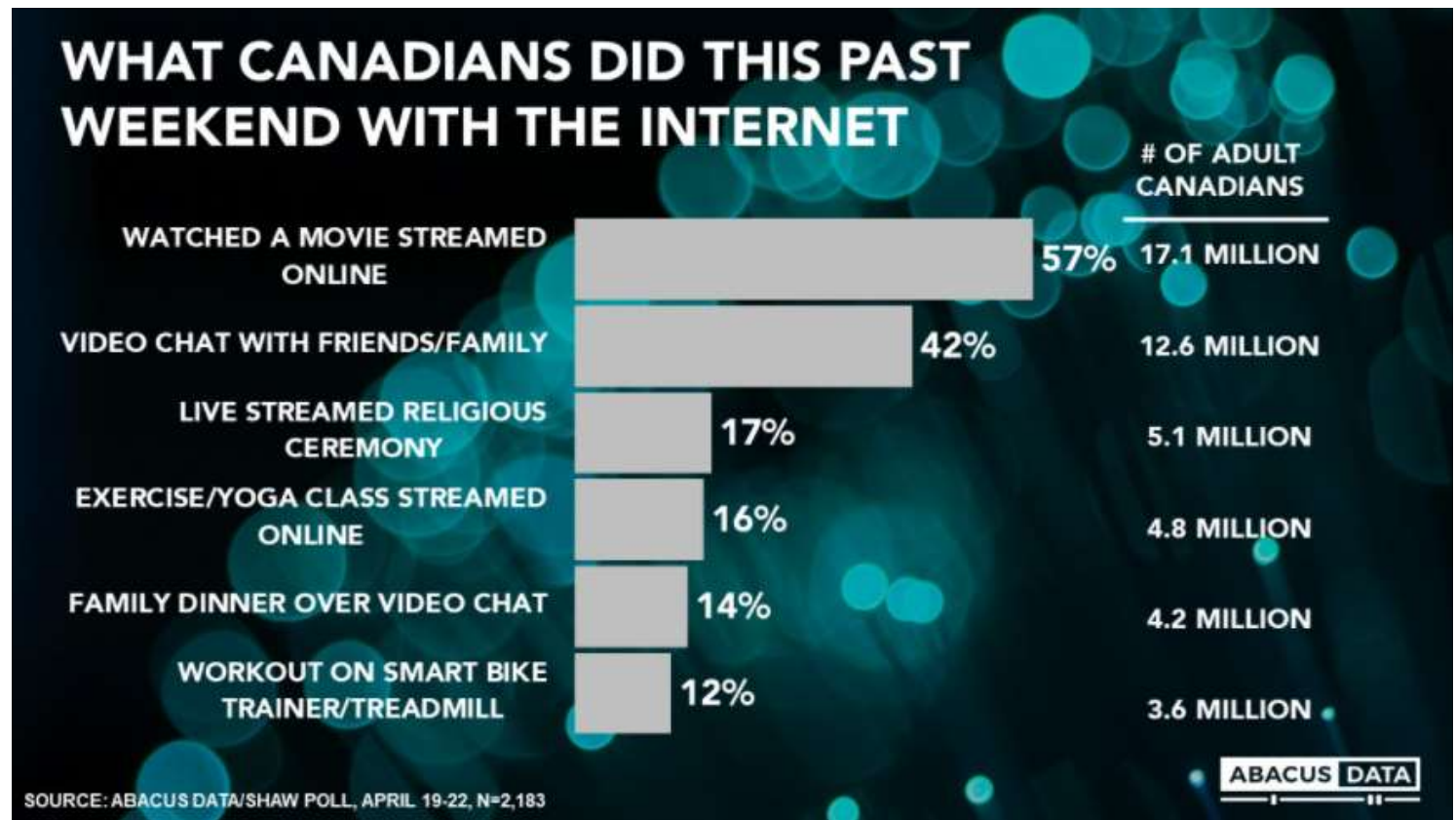
What are Canadians doing online?

57% are streaming movies

42% are connecting with friends or family over a video chat.

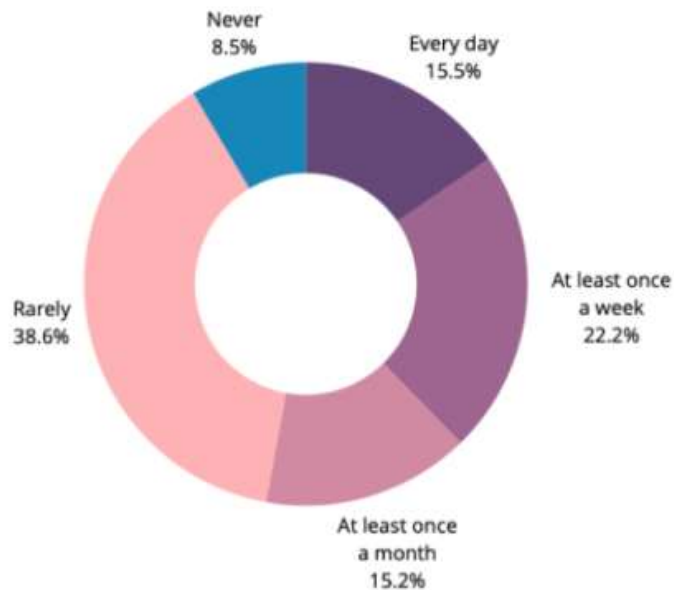
17% are watching religious ceremonies over a live stream.

16% reported doing an exercise or yoga class streamed online.



Working from home plagued by connectivity issues

"How often do you have issues with Internet connectivity working from home?"



52.9%

of respondents had issues **at least once a month** with their Internet connectivity.

15.5%

of respondents had **daily Internet connectivity issues** working from home.

n=1061, ± 3% accuracy, survey conducted 03/30/20

Source: Millions of Americans Are Working from Home with Unreliable Cell Signal and Internet (Waveform, [April 2020](#))

What is the #1 call driver to your help desk?

Multiple choice with single answer



Data collected from survey (with 161 responses) during recent Calix webinar (["The Science of Wi-Fi"](#), December 9, 2020).

Subscribers have overwhelming number of choices.





Alternative: Managed Wi-Fi, including:

- A 'best-in-class' Wi-Fi system. (And mesh, if/when needed.)
- Software that allows you to provide remote troubleshooting and problem resolution.
- Mobile app, that allows subscribers to be self-sufficient.



Managed Wi-Fi is better for subscribers

Easier for consumers to get their residential gateway from their ISP:

- **simple:** remove the stress of selecting from complex options;
- **secure:** ISP updates firmware and provides gateway-based protection;
- **flexible:** additional Wi-Fi systems available (if needed);
- **affordable:** monthly payments avoids large upfront costs; and
- **reassuring:** product warranties and technical support (using a variety of channels) should any issues arise.



\$9/mo



\$6/mo



\$2.95/mo



Included

Technology Update:

Wi-Fi 6 and the New 6 GHz Spectrum

Client devices continue to drive technology advances



SAMSUNG
Galaxy S10e|S10|S10+



iPhone 11



Apple iPad Pro



What is Wi-Fi 6?



■ New Technical Standard

- Institute of Electrical and Electronics Engineers (IEEE) finalized the new Wi-Fi specification standard, 802.11ax, in February 2021.

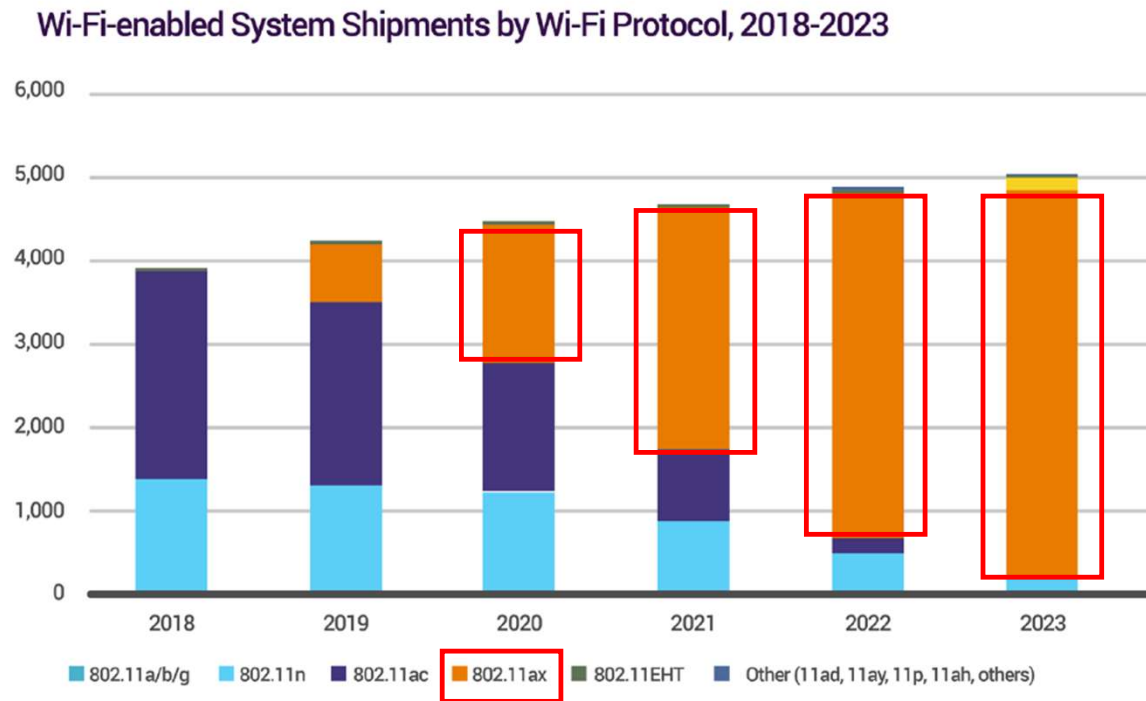
■ New Name

- Wi-Fi Alliance determined that consumers were getting confused by the alphabet soup of Wi-Fi technologies that have been available to consumers for 20 years.
- Suggested 'Wi-Fi 6' as the marketing term.
- Also renamed the two previous standards – 802.11n and 802.11ac – as Wi-Fi 4 and Wi-Fi 5, respectively.

The Benefits of Wi-Fi 6

- **Higher data rates**
 - Up to 37% Faster than 'Wi-Fi 5' (802.11ac)
- **Improved coverage**
 - 20-30% better
- **Increased capacity**
 - Up to 4x the throughput (thanks to MU-MIMO)
- **Performance in environments with many connected devices**
- **Improved power efficiency**

Wi-Fi 6 positioned to become dominant



Wi-Fi 6 (802.11ax) will effectively replace Wi-Fi 5 (802.11ac) by 2023:

- ~30% of sales in 2020;
- ~60% of sales in 2021;
- ~85% of sales in 2022; and
- ~95% of sales in 2023.

Source: IDC Research, February 2019; <https://www.displaydaily.com/article/display-daily/wi-fi-6-is-coming-to-a-device-near-you>



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What does Wi-Fi 6 mean for Managed Wi-Fi?

- **Wi-Fi 6 strengthens the Managed Wi-Fi value proposition:**
 - Better in-home coverage (even when devices ‘fallback’ to 802.11ac/Wi-Fi 5)
 - Faster speeds and more concurrent data streams
 - Position yourself as the technology partner
 - Expensive consumer-grade products on the market (e.g., Netgear and Asus routers are \$550+)
 - Monthly lease from the service provider is appealing
 - Wi-Fi 6 has lots of advantages for IoT devices
 - Better coverage, improved battery life, etc.
- **It continues to be more and more important to ‘own the home’**

What's Next for Wi-Fi 6?: 6 GHz spectrum

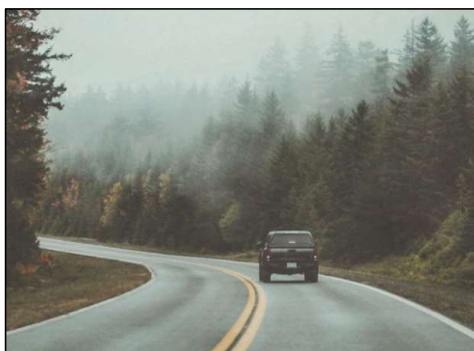


Wi-Fi 6E

Extending Wi-Fi 6 into 6GHz

Approved by the FCC
on April 23, 2020

Announcement from
CRTC expected soon



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More details on Wi-Fi 6E (6 GHz) and Wi-Fi 7

- Replay from ConneXions 2020:
 - [‘Update on Wi-Fi 6 and the new 6 GHz spectrum’](#) (Login required)

KEY TAKEAWAYS

1. When providing Internet connectivity, don't leave the in-home experience to chance:
 - Provide Managed Wi-Fi, with a consumer-grade Wi-Fi 6 system, cloud-based software for remote troubleshooting, and a mobile app
2. Wi-Fi 6 has lots of advantages for consumers
 - Improved coverage
 - Higher data rates
 - 4x more concurrent data streams
3. Wi-Fi technology continues its ongoing evolution
 - Wi-Fi 6 is here; and will be for years to come
 - 6 GHz ('Wi-Fi 6E') will bring dramatic improvements
4. Additional resources (including videos, webinars, and white papers) at calix.com/revenueedge.
 - Please feel free to contact me at greg.owens@calix.com.



**THANK
YOU**