Resolving digital congestion amid the cornonavirus crisis

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With millions working remotely, digital congestion has replaced physical traffic jams. Here's how we can all take part in freeing up bandwidth.

Have we swapped physical traffic jams for digital pileups? Urban congestion has been an issue in the U.S. for decades, and as millions now work, learn and play at home in an effort to socially distance, our roads are finally free-flowing again. However, the traffic has not disappeared. It has digitized.

Welcome to the new gridlock: digital congestion.

Can You See Me Now? The New Measure of Network Reliability

Imagine this scenario. You need the input of your co-workers on a high-priority presentation. You'll be presenting a dry run from your new work-from-home environment. You have three tools at your disposal: a microphone, a webcam and screen-share.

You know how to use these tools to communicate and elicit feedback using the right prompts. "Do you see where my cursor is?" "Rachel, please share notes at the end on this next visualization." "Dan, it looks like you have a question."

But after 15 minutes of choppy dialog, frozen screens, "can you repeat that" and "I just lost you," you're forced to email a static copy of what should be a dynamic presentation. You switch off your screen-sharing and video so you can dedicate your bandwidth to VOIP only, taking two of your most valuable communication tools away. You lean on verbalization alone, hoping your colleagues follow along as you call out slide numbers, charts and figures.

This is the new reality for millions today. Reports from Ookla show an almost 60% increase in the volume of speed tests, likely from users trying to troubleshoot and navigate these frustrating digital congestion scenarios.

Managing Digital Congestion, Now and Later

Working, learning and socializing remotely have become the new norm as we distance ourselves to stop the spread of COVID-19. The average daily broadband data usage per user in the U.S. was up 41.4% during office hours in early March compared with January.

Now, with the spike in traffic being far from temporary, we must look at how we can ensure that our communities are able to connect. Managing this demand will fall to multiple parties - internet service providers (ISPs), platform and application providers, government entities and, at times, users.

• Self-regulation:

As communications providers expand and improve their quality of service, citizens have a social responsibility to lessen digital congestion by being thoughtful about the bandwidth we're consuming. This isn't to help providers and the companies using their tools profit while we sacrifice; it's to make sure those working in critical fields like healthcare, medical research and government administration have the access they need to serve our communities. Many providers, like YouTube, Netflix and Amazon are reducing video-streaming quality by default, but there are far more taxing activities than video-streaming at our fingertips today. Live-streaming is highly demanding from a bandwidth perspective due to the way the data is individually packaged.

Much like our responsibly to self-regulate our social interactions, we must also be judicious with the way we connect. Before live-streaming a nature walk, workout, birthday or even something as well-intentioned as a lecture for a class, remember there are healthcare providers also trying to conference with patients.

• Communications providers' responsibility:

ISPs report increased at-home internet consumption of up to 90% in placed such as COVID-19-ravaged Italy, and certain categories like VPN are up as much as 160%. Providers are having varying degrees of success dealing with digital congestion, depending on location. Some European countries had to take proactive measures to avoid a failure. Others, like AT&T and providers of supporting services like Cloudflare, are finding their operations in the U.S. to be handling traffic relatively well. However, it's only wise to assume many who enjoy the new-found freedom of working remotely will likely continue in at least a part-time if not full-time capacity even after COVID-19 subsides.

This being said, ISP infrastructure upgrades must be made not just to meet sustained increases in demand but also to fulfill the consumer needs that existed in the market well before COVID-19 emerged. Our networks have advanced from the first T1 backbone in 1987 to the OC-192 (optic) connections of today, yet only 50% of the U.S. is expected to have access to fiber by 2025.

Further, GSMA estimates $1.1 trillion in 5G investments globally over the next five years, with U.S. companies devoting 87% of CapEx to 5G. This is a positive move without question, but one that needs reliable support, such as fiber, to take full effect. With an increasingly mobile workforce, accelerated rollout of both technologies will be key.

A beacon of light for people working from home, in the meantime, will be WiFi 6. This technology is designed to perform better in dense urban environments, accommodate the growing number of devices connected within a household, and limit dead zones throughout the home. The rate of adoption will depend on the pace at which hardware providers roll out compatible devices and how quickly consumers upgrade equipment.

• Platform and application responsibility:

Providers of communications tools play the second most pivotal role after ISPs. Even the fastest internet connection won't help you fare better on a platform without proper server capacity, load-balancing capabilities and an optimized means of data exchange. Unrelated to performance but equally as important is security. As an example, Zoom saw a decline in its stock price due to reports of security concerns following incidents of so-called Zoombombing and charges that the company shares personal user data with Facebook. The price then quickly rebounded (currently up 80% on the year) once the company addressed the issue by better adapting the enterprise platform for personal use. While these are by no means new areas of focus for providers, they are critical to monitor and improve.

• Government responsibility:

Government-regulated internet has been a hot topic of debate in recent years. Rather than delve into the world of pro- and anti-stances around topics like net neutrality, suffice it to say that governments will play a vital role in ensuring laws and regulations are structured in a way that encourages innovation and does not hinder infrastructure expansion or the development of new technology.

Don't Let the Silver Lining Fade

An empowered remote workforce is one more thing to add to the list of areas business leaders can focus on if we are ever to turn learnings from the COVID-19 crisis into lasting positive outcomes for business operations, public health, quality of life and the appreciation and protection of our environment.

Business will emerge from this pandemic with either an enhanced or damaged opinion of technology investments. It will be interesting to see how those with positive views continue to invest in technology.

The question is, will we learn from this temporary "new normal" to create an even better normal moving forward? We must alleviate the daily struggle (and environmental impact) of physical traffic without allowing the solution to become another problem.