

REPORT REPRINT

How a history of paranoia and strategies for next-gen architecture are helping with internet-based services during COVID-19

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The coronavirus may have halted some projects, but in areas of cloud and datacenter connectivity it is pushing companies to fast-track deployments, forcing the industry toward predicted adoption rates for 2021 and beyond.

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Introduction

We have already looked at the early initiatives being undertaken by global multi-tenant/leased datacenter operators as they work to keep staff safe and services running for customers. Things have changed – some providers have completely restricted customer access in some markets (Equinix in some European locations, for example). We have also seen more governments provide special considerations for datacenter operators and their staff by placing them on mission-critical infrastructure lists. A few weeks ago, we had only just started to get a picture on what demand these providers would face. Now we are beginning to see the real impact on the industry, with some insight into long-term impacts that could result from provisional challenges.

Demand for many online services and platforms – especially remote working and social media/communications – has been skyrocketing. Luckily, most major platform providers, from Netflix to Zoom, say ‘paranoid’ provisioning has been in their DNA since inception (meaning most already account for times when capacity requirements might skyrocket by up to 50%). This has allowed many to bring services online in a fast and efficient manner as the world comes under COVID-19 lockdown (in fact, it has provided the perfect opportunity for many to test contingency plans, in many cases with success).

The reality is that providers now need to prepare for a much longer-term scenario. This is leading to technology rollouts that may have been planned originally for six months, one year or even two to three years ahead. The focus, for now, is largely on the network, where bottlenecks are most likely to be experienced. It is not only the service providers that are hitting ‘fast forward’ on their digital transformation strategies – retail colocation providers, connectivity providers and internet exchanges that facilitate the movement of internet traffic are also being forced to look carefully at how they ramp up capacity. It is all about enabling more automated services and provisioning faster and remotely as the world moves online through COVID-19.

451 TAKE

451 Research’s first flash survey into the impact of the coronavirus shows that, while many enterprises have halted or delayed strategic plans as a result of the outbreak, such as hiring staff, new product or service rollouts, and IT and hardware refreshes, many also see a need to invest more heavily in areas of collaboration technology, mobile devices and services, bandwidth and network capacity, and information security. We are hearing from platform and service providers that their own deployment challenges are leading to massive ramp-ups of new and existing technologies well ahead of their time. The focus is largely on connectivity – to cloud, new datacenter ecosystems and networks. Cloud connectivity ecosystems and internet exchanges are also playing an important role in the delivery of services due to their ability to offer direct connectivity between participants, thereby reducing network constraints and providing increased security options to combat a rising rate of security incidents.

We predicted that cloud providers would drive demand for network-dense connectivity facilities and that new markets would begin to form around the edge. We are now seeing these predictions play out ahead of their time. Thankfully, many multi-tenant datacenter providers have already started preparing for such demand, migrating from 10Gb to 100Gb network architectures, connecting datacenter portfolios and ecosystems, and increasing internet exchange access. This has provided solid foundations for many new deployments now being made as a result of COVID-19.

Paranoid preparation

Residents encouraged to stay indoors are being told to watch Netflix, Apple TV and other streaming services, and to use communications tools such as Zoom, Facebook and WhatsApp to stay in contact with communities and loved ones – all while working from home and accessing online file systems such as Dropbox and Box. Thankfully, many of the platforms we are now so reliant upon have been designed to be extremely scalable in terms of network and compute infrastructure so that they can work at times of high demand. Many have been built using automation tools that can enable continued service with little human intervention. Most providers have ongoing arrangements with their supply chain for equipment and additional capacity from network and other providers to meet demand during usage spikes. The difference between COVID-19 and other scenarios is that ‘spikes’ are now likely to be quite global in nature and prolonged, and this means providers are seeking solutions for current challenges that align with plans they already had in place for future provisioning (such as regional rollouts, enhanced connectivity, edge compute infrastructure, etc.).

For most providers, the closer you are to the ‘eyeballs’ you serve, the more successful your service will be – in terms of delivery and cost efficiency. Service providers are carefully considering where COVID-19 has led to traffic spikes, which then leads to conversations about how they can increase bandwidth to that area/region. For some, it is about ordering more transit, for others, it is about leveraging a cloud exchange to push internet traffic across cloud environments, and sometimes it is about gaining access to internet exchanges for better network access. In many cases, it is now a combination of the above.

The world had already changed its view on how infrastructure was going to be delivered, but it was taking some time to realize how it would enable delivery at the edge. The rise of cloud computing was leading to more distributed workflows and datacenter footprints – the days of delivering global services out of one giant datacenter had already passed. Many companies, however, were happy with a regional or even national approach while they worked out how to gain greater benefits from more localized distribution of network and compute services. COVID-19 is forcing new conversations, however. One platform provider tells us that its conversations have shifted from global and regional to more local – sometimes even city-wide – network needs. Multi-tenant datacenter operators with global reach have also been helping providers enter new markets fast, especially where demand for collaborative or unified communications tools is concerned. Take an example of a university – previously, users at that university accessed services from one location. Now students are dispersed across a country, placing new demands on the platforms and services, thereby changing from a focus on having fewer locations with higher throughput to a focus on edge locations.

Public cloud scalability

The public cloud is also playing an important role in enabling scalable growth of services. In some cases, platform and service providers already leverage public cloud and bare-metal services as a way to scale up and out in times of high demand. COVID-19 is no different. Providers are increasingly realizing challenges in gaining access to servers with some supply chain constraints (although many large providers had provisioned or secured their supply chain the minute they realized the restrictions COVID-19 might place). Where supply chains are failing, or where supply chains are simply not enough, public cloud and other hosting options are allowing for additional traffic to be delivered. Providers say this reliance upon public cloud is pushing them further toward hybrid adoption and highlighting the importance of leveraging cloud onramps – often from colocation facilities – to migrate from private and public environments while ensuring business continuity.

Internet exchanges

Internet exchange platforms have also played a vital role in keeping services running. While some exchanges that are used for mobile roaming traffic saw a dip in use following COVID-19 quarantine measures, others facilitating the exchange of internet traffic have seen huge rises in demand. AMS-IX – one of the world's largest public internet exchanges – says it has seen usage grow by about 17%. Some DE-CIX locations have seen rises of 15-30% (in Frankfurt, it has seen a 100% rise in video conference and 50% growth in CDN traffic). Private internet exchanges such as that operated by Equinix have also seen high growth, while some regional providers such as NL-IX are saying new demands are being placed upon their infrastructure as traffic moves from evening video demand to daytime, as well as more localized requirements.

For some IXs with global footprints, traffic increases have been occurring since December 2019. Thankfully, many IXs had already started to upgrade from 10Gb to 100Gb infrastructure, to cater to predicted future demand. Equinix is one of these – it says that, while it had planned to future-proof its IX requirements, it is already seeing high peak capacity at some locations, especially where collaboration and unified communications tools are in high demand. Service and platform providers and even enterprises are becoming increasingly reliant upon IX environments as they look to safely exchange data and connect to services, with many now requesting multiple 100Gb connections.

Remote working

As the COVID-19 work-from-home orders started rolling out globally, datacenter providers began to see an increase in requests from customers wanting to use direct connectivity into cloud exchange environments for access to collaborative or unified communications. This has been as much about security as it has been about enabling for a scale up in work services delivered over the internet. For datacenter providers, this ultimately means more revenue-raising cross-connects. Thankfully, many providers have already started to automate the processes of ramping up cross-connects in datacenters; where such initiatives have not taken place already, we suspect that they will be pushed onto near-term agendas. Some providers say what they are seeing in cross-connect demand and the maturity of use cases equals what was originally predicted for two years' time. Requirements for VPN aggregation for teams working from home, virtualized firewall solutions and peering beyond basic transit services have all been on the rise. On the flip side, blueprints that were maybe deemed too complex for some enterprise IT teams are now being considered as companies look to leverage the full spectrum of connectivity options available to them inside the colocation provider or services ecosystem.