

Perfect Edge Cloud Storm to Rain Opportunity

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If you have ever wondered where the “edge” is, you are not alone. The discussion around “edge” tends to refer to it as if it were one thing or place. This habit has its origins in a time when our industry understood that edge was going to be important but did not yet have a clue what use cases it would serve or how to monetize it.



This past summer, MobileEdgeX [revealed insights collected from years of exploration](#) into the most market-ready edge use cases. Leading the pack were enterprise-friendly technologies that spanned video and media, IoT, manufacturing and security. The market has spoken, and it is clear that end user demand exists. Every mobile hardware and software player has thrown its hat in the edge ring in some way or another. Telcos are signing onto edge initiatives, hosting hackathons and opening networks to live experimentation. The only thing missing at this point are the revenues. While you will probably still need a magnifying glass to see those in 2020, come the end of next year, we will largely see the foundation set for edge success.

Where’s the edge again?

It is a conversation we have so frequently, yet somehow it still has not gotten old. We’re asked all the time about where exactly the edge is located. The question is a fair one because, for all of the industry’s bluster about the promise of edge computing, too little thought has been given to who will use it and what they will need to be successful. In fact, people tend to look at edge from the operator’s perspective. But we submit that it is far more valuable to flip that view and think of edge as the first part of infrastructure that you see from the device.

Edge will increasingly be defined by the growing needs of more and more mobile devices delivering more immediate experiences rather than more distribution of the cloud. With this in mind, there are four types of edge available to any application today, each providing services and value versus associated costs and downside.

Device edge

Here, processing happens as close to the end user as possible: on the device itself. This is where we find drones, vehicles, robots and handheld devices. The device edge boasts total dedication, but its struggles include heat, size, power and computing costs.

On-premise edge

The on-premise edge represents the campuses, factories and enterprises where innovation demands nearby computing—usually lots of it. Here, we find the ultimate scenario for control, which has great appeal to the users most likely to explore such a deployment. However, implementing and managing such a network is challenging and requires great resources.

Telecom edge

The telecom edge has the ability to be quite literally everywhere, and quickly too. It represents the hundreds of thousands of 4G and 5G endpoints like virtualized base

stations, regionalized data centers and cell sites being deployed globally. And it boasts the ultimate service presence, though this infrastructure is still quite fragmented today. This presents a challenge for developers that will settle for nothing less than ubiquitous access if they are to build mass market applications and devices. But efforts with substantial momentum behind them are addressing this challenge.

Centralized cloud edge

Perhaps the easiest and most established edge location, the centralized cloud edge is also typically furthest away from where computing exists. While the cloud edge tends to be proprietary, this has largely not been a hindrance for applications that did not demand blazing fast speeds and ultra-low latencies. However, next-generation computing needs will find the long distances to traditional cloud edge locations unacceptable.

Telcos best positioned for edge

Mobile operators find themselves in an enviable position when it comes to edge, as they can help mitigate the shortcomings of all other edge locations. Let's quickly recap the capabilities edge needs to deliver to meet next-generation computing needs:

- Proximity to offload data streams, as needed
- Complex bandwidth handling that won't bring networks to a crawl
- Ability to support communications between people or devices within close proximity to each other without requiring traffic to be sent to some faraway cloud location
- Data sovereignty and ability to meet enhanced governance requirements when supporting video-powered use cases like facial recognition
- Geospatial awareness and the ability to interpret local surroundings with simultaneous location and mapping

As I mentioned earlier, a perfect storm is brewing for telcos and edge. Enterprise demand combined with fast-paced mobile 5G investments and the ability to deliver on near-term market-ready use cases, all while being able to provide support at every viable edge location, creates a powerful front. In just the past few months, there have been concrete steps forward.

In North America, via a partnership with MobileEdgeX, TELUS recently became the first mobile operator in the region to unleash live edge computing access. The initiative will start by giving Canadian developers access to experiment with edge computing functionality, allowing them to build, experiment and test applications using next-generation, low-latency network services. Work is expected in areas that include augmented and virtual reality, smart cities, Industry 4.0, gaming and immersive entertainment, autonomous vehicles and more.

To start, live testing will be available in select major cities across Canada, including the TELUS Lab 5G at Zú, a Montreal-based incubator for start-ups innovating in the entertainment space. Additional live testing sites across Canada will be announced shortly as the program evolves. This global edge network includes more than a dozen other top-tier operators.

In addition, other news about innovation at the edge is already breaking early in 2020. [Verizon also made headlines recently](#) when it said it would work with AWS to offer 5G network edge computing with AWS Wavelength. The strategy extends AWS's cloud computing reach out to the mobile edge to provide developers with the ability to deploy applications that require ultra-low latency. A pilot is underway in Chicago to demonstrate how AWS Wavelength customers can deploy latency-sensitive parts of an application to the edge of the network and then seamlessly connect back to the full range of cloud services running in AWS. Recently, [AT&T has touted its work](#) to integrate 5G with Microsoft cloud technology to enable next-generation solutions at the edge.

We know from experience that developers will ultimately need access to a common interface that lets them easily deploy across regions. The edge ecosystem will be

defined by a range of strategies that are best suited to the operator, region and target customers. We expect that a common interface will lay across all these strategies, rolling up infrastructure and resources to be tapped by the broader developer and device maker communities.

Putting edge to work in 2020

While the revenues may have to wait (for now), what is clear is that 2020 will bring our first real look at all that edge can be. Even if telcos take different software and hardware approaches (and they likely will), they need only work together to ensure they are exposing a common layer to developers to bring the entire massive opportunity together. By this time next year, I predict we'll have quite a clear picture of what that can be—and a clear sense of how 2020 brought a perfect storm of opportunity to telcos ready to push forward.