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The Monogamous Relationship Between 5G and Edge Computing

Bringing IoT Innovations to Life

5G and edge computing are vital in improving the performance of applications and processing excessive amounts of data in real-time. Consider them in a monogamous relationship in a sense without one; the other cannot grow to its full potential.

Let's delve deeper into edge computing and 5G, how they work together, and what makes their relationship a necessity for the Internet of Things (IoT).

Edge Computing

Before we start talking about edge computing, we must first discuss the ins and outs of the cloud. Traditional cloud services transmit data through centralized servers, often hundreds or thousands of miles away from end-users. The public internet is limited and can't handle the bandwidth needed for data traveling long distances, which causes delays and interruptions. The larger the data, the longer it takes to get to its destination, be processed, and downloaded. The cloud is ideal — for sending an email, posting on social media, downloading a PDF, or watching a video on YouTube.

Edge computing happens at the periphery of the network, close to the data source. It supplements the cloud by processing data in devices themselves located near colocation data centers bypassing the public internet, limiting the distance between the data source and the end-user, reducing latency, increasing capacity, and reliability to levels required for 5G to work. Edge computing is a critical component of IT infrastructure for businesses dependent on ultra-low latency network performance. By 2025, **75%** of enterprise-generated data will be created and processed outside centralized data centers.

5G

5G centers around edge computing, enabling cloud computing at the edge of 5G networks resulting in real-time, low-latency network access to the network's edge, where end-user devices exist. 5G reduces network latency between the network endpoint — a remote computing device like a laptop or smartphone — and the radio tower. At the same time, edge computing places the computation and storage resources with the telecom network infrastructure, eliminating any latency associated with central data centers.

What differentiates 5G and 4G? 5G has 100 times the speed and up to 1,000 times the capacity of 4G. The speed and bandwidth demand of 5G is far greater than that of 4G and cannot be supported by centralized cloud servers.

5G's ultra-low latency means a web page will load entirely in 1 second versus the several seconds or longer it takes with 4G. No more endlessly waiting for software to download. Video conferencing calls don't freeze up or drop altogether. Streaming videos don't buffer or suddenly stop and reload. Entire HD movies can be downloaded to mobile phones in just a few seconds.

5G and the Edge Brings IoT Innovations to Life

5G and edge computing are adding fuel to the fire when it comes to innovation. IoT is the network of connected devices which collect and exchange data in real-time, increasing efficiency and speed affecting all industries. IoT use cases include autonomous vehicles, smart cities, artificial intelligence, augmented reality, virtual reality, drones, telemedicine, and biotechnology, to name a few.

The IoT market is growing. By the end of 2022, there will be **29 billion** connected devices globally. IoT solutions have the potential to generate **\$3.9 – \$11 trillion** in economic value by 2025.

The Takeaway

Colocation providers like Netrality are pivotal to expanding 5G coverage and powering 5G-enabled innovations. Our interconnected edge data centers and colocation facilities near end-users provide businesses with the necessary processing capabilities to stay relevant in the market and strategically aligned with new innovative technology advancements.

Leveraging Netrality's edge facilities enable enterprises to directly access multiple disparate long-haul and metro carriers and direct cloud on-ramps to keep pace with the data processing and transmission demands of 5G. These direct connections provide unparalleled reliability and the ability to scale virtually indefinitely, accommodating enterprises' needs for flexible, cost-efficient growth.

As the building owner and operator, we provide both data center and unique office space to enable a 5G test-bed environment for the whole development life cycle. Enterprises can custom-build 5G innovation hubs to design, test, and optimize 5G technologies and services.

As Netrality's footprint expands across major U.S. cities, and as more content delivery networks, cloud and network service providers, and enterprises become part of our facilities, connectivity will expand. By connecting at the edge with Netrality, enterprises maximize their processing power, speed, connectivity, reliability, and scalability.

To learn more about our strategically located data centers, [contact us](#) today!

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