

The Edge in Focus – How Edge Computing Will Power the Age of Data

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The emergence of cloud computing changed the world as we knew it. By freeing up data from the limitations of the physical hardware holding it, cloud computing opened up new possibilities of on demand access and availability. Today, it forms the foundation of any digital transformation effort, but is it equipped to enable next generation technologies such as AI, ML and IoT? Cloud computing operates on a consolidated and flexible structure but lacks the network bandwidth to facilitate the lightning fast, real-time data collection and analysis that is a pre-requisite for data centric technologies. And this is where Edge Computing can help. Edge platforms will power the next phase of digital transformation and help organizations across sectors unlock true value of their technology investments. In fact, the global market for Edge computing technology is expected to reach a whopping \$250.6 billion by 2024 with a compound annual growth rate (CAGR) of 12.5% over the 2019–2024 forecast period.¹ As 5G networks become a reality, and data volumes explode, edge computing platforms will be a necessity to fully leverage newer technologies.

What is Edge Computing?

Edge computing takes data storage and compute closer to the source or the “edge” where the data is being produced. By eliminating the need to transfer data to the core, this distributed computing platform ensures low latency, and real-time data processing that takes less bandwidth. Once processed, relevant data can be transferred to the cloud or be transferred back to the device to facilitate real time action and decision making. If the advent of cloud computing galvanized a new digital era and made the SMAC stack a reality, then Edge computing is the power behind paradigm changing technologies like IoT and 5G.

As the world gets more connected and the number of connected devices increase exponentially, the amount of data generated will also witness an unprecedented increase. This data must be analyzed and utilized effectively for better decision making. But sending this data to the cloud for analysis will only result in blocking network bandwidth which in turn will slow down the analysis and insight process. Edge computing helps decentralize data processing and lower dependence on the cloud. It is also invaluable in an increasingly application dominated economy. There were 52 million apps in 2009. By 2019, this number had grown to 335 million and the count increases every day. These modern applications are required to work fast

and deliver real-time results. With edge computing data is processed closer to the source and there is no latency in data transfer to and from the cloud. It is also easier to secure the data on the edge as organizations can secure endpoints and local networks. As we move forward from the pandemic related crisis of this year, improved resilience, and business efficiency will be top of mind of most organizations across the world. Investments in edge computing can give them the competitive edge they need to recover.

Of course, like most things in life, edge computing is not without some drawbacks. To operate at scale, the workloads need to be portable. Adopting portability standards can be difficult with multiple and varied workloads, especially since the full lifecycle of each application must be included. Breaking down each workload into subcomponents will help to run parts of the workload across edge nodes. And managing a distributed application deployment structure will require orchestration and automation tools, further complicating an already complex ecosystem. But, as we proceed to the next phase of digital transformation, and the world grows increasingly connected, the advantages of edge computing will far outweigh the disadvantages.

The Telecom Edge

When it comes to the Edge, telecom service providers have a key role to play in enabling the technology and making it accessible for the world by helping move computation and storage to the edge of the network. 5G is expected to contribute to 1/5th of the world's mobile data traffic by 2023 and 25 percent of its use cases will depend on edge computing.³ In fact, most of the revenue from 5G is expected to come from enterprise and IoT services which will be driven largely by the Edge. Diverse applications such as Virtual Reality, Augmented Reality and even gaming will depend on Edge capabilities of 5G networks to deliver seamless low latency and high-speed connectivity.

Edge computing in telecom is called Mobile Edge Computing or Multi-access Edge Computing (MEC). It provides execution resources (Compute and Storage) for applications along with networking power inside or at the boundary of operator networks. Telecom operators can open their Radio Access Network edge to authorized third parties to flexibly and rapidly deploy innovative applications and services for their subscribers, enterprises and vertical segments. Edge computing can also be enabled at enterprise premises and can be hosted and managed by communication service providers or others. The Edge can help service providers explore new revenue streams and also ensure substantial savings on CAPEX, OPEX, transport, backhaul cost, and lease.

The Edge in Banking

For the BFSI sector, edge computing holds the key to not just recovery from the pandemic, but also a sharper competitive edge in a market flooded with fintechs and

big tech companies. Effective analysis of data can unlock invaluable insights into customer behavior and expectations and form the basis of almost every strategic decision including relationship-based pricing & billing to personalization. Advanced data analytics technologies like Artificial Intelligence and Machine Learning need the low latency foundation that only edge computing can provide. Lightning-fast analytics can also empower financial services companies to accelerate response time to critical information. For example, traders need to make quick decisions based on events unfolding at that moment. Rapid interpretation of incoming data powered by the edge can help trading firms respond quickly and accurately to market shifts.

Edge computing can also power further innovation within the sector by enabling banks to experiment with services and solutions that offer greater value to the end user. Mobile ATMS that can be accessed via an app and even be fitted with facial recognition measures for secure transactions are another interesting possibility. Edge computing can even be leveraged to create interactive kiosks that can gauge customer requirements from a few inputs and historical to offer personalized transaction options. Edge computing makes it possible to secure the end devices as well as the network close to the source. Banks can create a segmented security approach that can restrict threats to the outer edges of the architecture without it reaching the core. It can also help in the early detection and prevention of fraud.

At this juncture, it is evident that technology transformation is key to future resilience, profitability, and competitive advantage. Technologies with the power to change the world and drive a new era of growth and inclusive development are already a reality. The question right now is whether we have the power to ensure widespread adoption. Edge computing can power the next wave of secure innovation and growth for the world by facilitating emerging trends such as Artificial Intelligence, Machine Learning, Internet of Things. From connected cars and smart surveillance to connected healthcare and smart cities, the Edge with its seamless analytics capabilities is vital for ensuring a resilient and technologically empowered future for the world .

Sources:

1IDC

2The Wrap

3Ericsson

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