

The Future of Edge Computing



Edge Computing is intended to enhance Cloud Computing by performing some processing and analysis in devices located at the “edge” of the local network (Edge Devices), near the source of the data. This reduces the amount of data that needs to be transmitted to the Cloud (reducing required bandwidth), and eliminates the latency associated with the round-trip movement of data. An Edge Device can be a computer, a gateway, or some other device that performs local processing.

3 motivating factors for using Edge Computing, according to IBM Research:

01

Preserve privacy

With Edge Computing, an application can make sure that sensitive data is pre-processed on-site, and only data that is privacy compliant is sent to the Cloud for further analysis, after having passed through a first layer of anonymizing aggregation.



Reduce latency

When low-latency results are needed, Edge Computing applications can implement machine-learning algorithms that run directly on IoT devices, and only interact with the Cloud off the critical path, for example, to continuously train machine learning models using captured data.

02

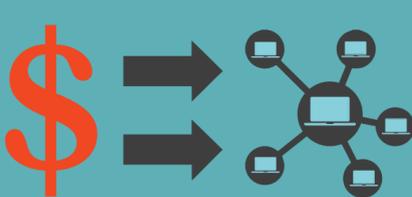
03

Be robust to connectivity issues:

Edge computing ensures that applications are not disrupted in case of limited or intermittent network connectivity. This can be very useful when applications are deployed on remote locations where network coverage is poor or even to reduce costs coming from expensive connectivity technologies like cellular technologies.

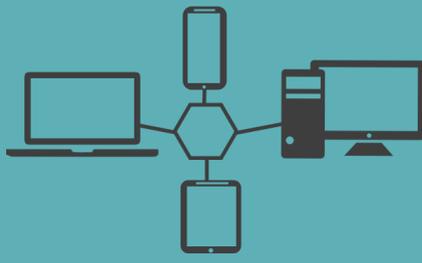


Telecom operators and enterprises in the US and Europe will spend about **\$272 billion** on edge computing capabilities between 2017 and 2026, a figure that will exceed investments in 5G networks, according to a new forecast from research house IGR.



According to the Global research analyst IDC, by 2018 up to **40%** of IoT-created data will be stored, processed and analysed at the edge of the network.

Edge computing is becoming a more widely used phenomenon with the IoT — BI Intelligence forecasts that **5.6 billion devices** will be connected to an edge computing solution by 2020.



Challenges with Edge Computing



All remote edge devices must be properly secured in order to prevent data tampering.

01



Devices deployed with edge computing must be properly maintained and operated to ensure the continuity of services.

02



Business process and the company policies using edge computing must be revised in a timely fashion.

03



Programmability is yet another challenge in edge computing.

04



Server management gets tougher with edge computing.

05

For businesses adopting the edge, the **5 main components** of developing a comprehensive strategy are as follows:

1

Define objectives and requirements including business goals/drivers as well as brand, customer and return-on-investment requirements.



2

Map the network topology from the edge back to the core.



3

Define the systems, protocols and programs that constitute the edge processing, abstraction and communications capabilities.



4

Define the networks that link edge-processing units to data sources and back to core processing facilities.



5

Develop strategies for supervision, maintenance and security of edge-computing systems.



The five main components are from [datacenterjournal.com](http://www.datacenterjournal.com), <http://www.datacenterjournal.com/edge-computing-right-business/>



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Sources:

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