Ever since the beginning of the Digital revolution, technology as we know it has been progressing more and more each day. That being said, people are looking for improvements and better or faster alternatives every chance they get. Therefore, the question, whether edge computing is better than cloud computing has been raised.

I’ll be talking about Edge Computing and Cloud Computing, their key differences, advantages as well as disadvantages.

One of the most wide-spread software trends today is cloud computing. It’s a form of data storage, where data is stored in remote centers and can be accessed any time from any device. However, cloud is not the only form of distributing computing. Nowadays, especially with the rise of IoT, many businesses opt into Edge Computing.

The term “Edge computing” refers to computing as a distributed paradigm. It brings data storage and compute power closer to the device or data source where it’s most needed. Information is not processed on the cloud; instead, the cloud comes to you – the data is distributed on decentralized data centers. This distribution eliminates lag-time and saves bandwidth.

Edge Computing is an alternative approach to the cloud environment as opposed to the “Internet of Things.” It’s about processing real-time data near the data source, which is considered the ‘edge’ of the network, hence the name edge computing. Basically, it is bringing computation and storage as close to the application, where the data is being created and the actions are being taken, as possible.

Up until now, the edge used to be a place where these devices connected so they could deliver or receive information from the cloud. However, with the explosion of the Internet of Things, that model has had some shortcomings. IoT devices gather so much data, that the sheer volume requires larger and more expensive connections to data centers or the cloud. The nature of the work performed by these IoT devices is also creating a need for a much faster and cheaper connections between the devices and the data center. Those two are the main benefits associated with edge computing – improved performance and reduced operational costs.

Edge computing is a perfect alternative in these cases:

* The network doesn’t have enough bandwidth to send data to the cloud, meaning files can be kept locally.
* Control over sensitive information.

Cloud computing has its’ own unique advantages:

* There is no need to invest in securing local networks
* It allows storing large amounts of data with no limitations
* It is easy to deploy on multiple devices

Key benefits of edge computing (vs cloud):

* First of all, it has reduced latency. It provides faster user experience.
* Safety is also a major advantage, as cloud computing allows companies (users) to keep control of their data, as you’re not using a 3rd party to store it, but storing it locally.
* Allows to store data on the edges of networks and in remote centers.
* Versatility – finds a balance between cloud and local storage.

Despite all these advantages, cloud computing is not near to being perfect:

* Won’t process data streams, meaning it requires additional power supplies / duplicate servers to work as intended, in case of an accident.
* If there aren’t enough local servers, the edge computing will not be able to accommodate large amounts of data.
* The company also needs to monitor and repair local servers, invest in maintenance etc.
* Technically, edge computing is safer than cloud computing, as you do not have to transfer your data though a 3rd party provider. In reality, this is only possible if you invest in securing your local network.

Edge technology can be very useful in a variety of industries:

* Self-Driving vehicles, because their decision making has to be incredibly fast. A delay would occur if cloud computing was used.
* Healthcare software, which required real time data processing.
* Manufacturers can use edge computing to process multiple data streams at the same time
* Every smart product, because they need to process the users’ input immediately to make fast decision and perform requested operations.

Looking into the future, many companies now are making a move towards edge computing. However, edge computing is not the only solution. For computing challenges faced by IT vendors and organizations, cloud computing remains a viable solution. Delegating all data to the edge is also not a wise decision. That is why public cloud providers have started combining IoT strategies and technology stacks with edge computing.

Edge computing vs. cloud computing is not an either-or debate, nor are they direct competitors. Rather, they provide more computing options for your organization’s needs. To implement this type of hybrid solution, identifying those needs and comparing them against costs should be the first step in assessing what would work best for you.