

Time for data to get the Edge

The big change in IT is where there is simply too much data; too much to be made sense of without mathematical models, too much to handle without automation



BY SHAHIN KHAN

There are three things that are hard to do: agree on what happened in the past, realize how things really are in the present, and predict the future. We will have to touch some of each in this article as we look at how cloud computing has evolved and how it is likely to change.

It seems too early to talk about a post-cloud era in computing. Cloud computing is growing rapidly. But the way organizations use information is changing, and with it, the role of cloud computing is changing too. Remember that the central concept behind cloud computing is 'Utility Computing', and that goes back several decades. Grid computing followed in the 1990s before morphing into cloud computing by mid 2000s. That was 15 years ago, before social media, before artificial intelligence (AI), before internet of things (IoT), cryptocurrencies, and 5G. A lot has happened since. So some change should not be too surprising.

Digitization is eating the world

You could make a case that the four Vs of data – volume, variety, velocity, and value – have weaved together

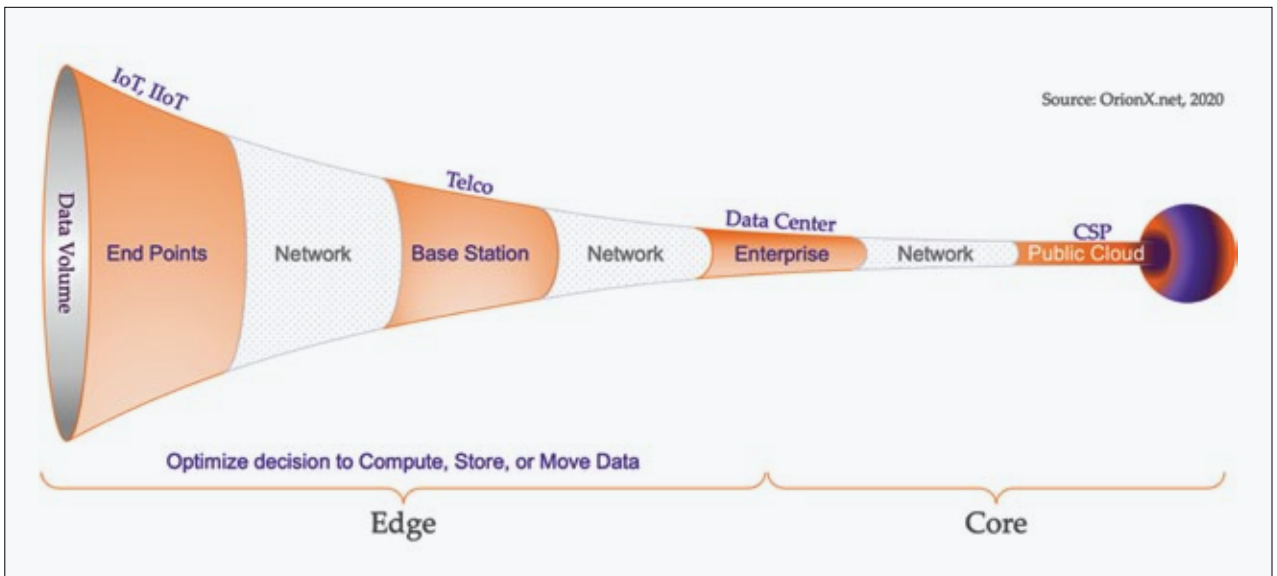
to form a common thread that change information processing. Data from big companies led to initial management information systems (MIS). Data from internet-connected organizations of all sizes helped create online search. Data from people was behind social media. And smart connected things serve as the fountain of data that is enabling AI.

While data volumes grow from all existing sources, it is new sources of data that accelerate change. New types and sizes of data enable new economically-viable applications which invigorate new infrastructure. Optimization efforts follow.

The big bang of IT

Computing started with a big mainframe accessed by a directly connected local terminal. It's been getting decentralized ever since. The monolithic terminal/mainframe model carries on but it gave way to the more distributed 2-tier or 3-tier client/server model. Cloud computing expanded the IT universe further. The end points moved further out and became mobile as servers became hyperscale. For a short while, it seemed like

Edge and core computing is the result of computational model, focused on end-to-end decentralized resources, and providing the optimal balance between data movement.



one could have a mobile phone on one end and a public cloud on the other end, and it would be done, nothing in between. But alas, that simplicity would not last.

Too much data (really!)

“Thing Data” is a new fountain of never-ending data. It is what is changing IT as it creates entirely new markets. Most “Things” are outside the cloud. That means most of the data will be created, and ultimately consumed, outside of the cloud.

If the data is small, the device can communicate directly with the cloud, and perhaps a mobile app can provide local and remote control – and IoT. But when the amount of data is too large, it becomes too costly to ship around the data willy-nilly. Rich data, such as 4K video, Lidar, telescope or satellite data can quickly complicate matters.

So the big change in IT is where there is simply too much data; too much to be made sense of without mathematical models, too much to handle without automation, and too much to send to the cloud. And the big realization in IT is that this scenario will be relatively common.

Edge and core computing

Edge and core computing is the resulting computational

model, focused on end-to-end decentralized resources and providing the optimal balance between data movement, data storage, and data processing. The label edge works well since it covers the spectrum of devices, points of inception, and local in-situ processing. We can look at edges as the far edge (devices), mobile edge (mobile app for local control and tracking), and near edge (server-based apps and app components).

Edge computing is an emerging market segment with a device-to-cloud perspective, covering the area from the source of data towards the cloud. Core computing is the flip side of that picture: a cloud-to-device perspective that covers the area from the cloud towards the device. Edge/core combines the two halves and covers the end-to-end picture, including the part between IoT and cloud.

If cloud was Mainframe 2.0, then edge/core is client/server 2.0. More spread out, more flexible, and representing the complete digital fabric that represents an automated or autonomous organization. 🧩

Khan is Technology Analyst &
Founding Partner, OrionX
feedbackvnd@cybermedia.co.in

