

# The Cloud Computing News India

News And Info On Cloud Computing And Virtualization

## Cloud Innovation – What’s in it for the enterprise?

By Arpit Joshipura

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Software defined enterprise is here to say. Now what does that mean? It is all about IT convergence and I talked about, in one of the panels yesterday, that there are like three layers. There’s the infrastructure layer; then there’s everything in the middle and then there are services. I’ll make it very simple for you.

This is a more complicated diagram, but you can see the bottom layer of the diagram is the infrastructure service, storage network and the software that goes inside it. Then there’s the thing in the middle and then there’s applications on the top. And then they somehow are glued together and things like that.

The great news about the infrastructure and about the application is we’re now for the first time hitting multi-rate 100 gig speeds on the network. We started with the lowest of the low speeds and now we are multi-rate, 1, 10, 25, 40, 50, 100, you name it.

Getting very close to 400 in the next five years. And then we’re moving to a compute-centric infrastructure where things are happening close to an X86 kind of an architecture. So with that said, what does it mean? It means that all your workloads and applications, whether it’s productivity, big data, security, traditional workloads, new workloads like VDI, software defined datacentres, VMs, containers, all of those things fall in three buckets.

There’s the software defined compute bucket, software defined network bucket and in this conference we’ve not talked about software defined storage, but that’s an integral part of the software defined datacentre, where storage technology moves closer to the compute and can be run on an X86 infrastructure.

And this was quite well discussed at the second debate with Brad where he talked about the agility being the driver as opposed to cost and it was also discussed by Sean in the other panel where he basically believed or the panel believed that the infrastructure, the private cloud, it’s all ready. People challenges remain. So that’s kind of a summary of those two, in the context of the first disruption, which is software defined enterprise is here to stay.

Well, software defined carriers now with NFV are another angle that’s very interesting. The entire black box and proprietary infrastructure is moving to an X86 compute platform in the carrier network. That includes telco as well as cable industry.

What does that mean? Black boxes, more to a horizontal layer shown on the right. Some of the analysts’ numbers have come out. The PAM on the carriers are going to be as big in ten years as the enterprise IT PAM. And I think we heard yesterday by 2020, 40% of the servers will be in the service provider market and as you know this was covered quite well by the panel yesterday on NFV and SDN.

Disruption number three. Let me tell you a story on this before I get into the actual architectures. So in the last six months, I’ve visited almost 50% of the top 25 carriers myself. And in the four hour, eight hour meetings we have with all of them, I want the CIO and the CTO and his teams in the same meeting. And we’ve had lovely conversations, whether you take Asia, you take Europe, you take US. Wonderful

meetings.

Guess what? The CIO/IT side of the house talks about workloads, they talk about business continuity, they talk about agility on business. But the technology side of the carrier talks about services like mobile broadband, 4G, LTE. They talk about carrier grade, talk about service agility. Completely different vocabularies — completely different vocabularies.

But the underlying infrastructure is also very interesting. If you look at the left hand side, you see an enterprise-centric view or an IT-centric view where datacentres are at the heart of everything and you have campus and remote office and then all these carrier things, as small clouds on the middle part of the diagram.

On the right hand side, the same view is from our carrier colleagues on the CTO side. Where you see the datacentre is a really small thing and then they've blown up the rest of the cloud with metro access, carrier Ethernet, edge routing and core routing.

Completely different mindset. It's a matter of perspective. And this was done again in debate one, where it was set up where SDN, NFV, how do we see these things.

Disruption number four and we've talked about this for the last two days. Organisations are in turmoil. Who will win? You see the picture on the left, I call it the hotdog model. It's a hotdog model. Now I know we are before lunch, so let me spice it up a little bit. And we move to more of a lasagna model that I was talking about layered horizontally in a software defined IT world. So when the silos break down with software defined, who's in charge?

So here's your side by side picture. On the left is your enterprise IT, horizontal layers; on the right is the carrier, horizontal layers. The guys that are running the show on the left hand side are server admin, storage admin, network admins, converged admins, you name it — security admins. The guys running on the right hand side are either the carrier's CTO or the CIO.

This is a fundamental discussion that as I talk to these customers, they are having. And it's not a question of just retraining. So you start off with the organisation. First of all, can they come together and talk about common tools and processes? Then can they come and talk about who's in charge? Will the IT side of the carrier host NFV? If they do, they know how to run this, they know how to run a standard datacentre with IT.

But if the network guys are going to procure, deploy and buy the IT equipment, they have not seen that. They are used to the Ericssons and the Alcatels and the Ciscos and the Junipers and the Huawei's and the typical black box proprietary solutions. So do they retrain or do they work with the carrier colleagues? That's the discussion that is happening this year. So this is a very important disruption.

But I will tell you one thing. It has very common traits and common DNA. So it's a solvable problem. That's the number four. Number five, who will win? In my mind and I've always believed that, proprietary technologies are good enough to get started to show differentiation and innovation, but it will never hit mass market. It will never reach the global scale. At the end of the day, open and disaggregated will always win.

Now there are ways to get to open. You can do open source and that's faster. But eventually, open standards are long lasting. So in my view, when you take a black box and you start separating the layers, the silicon layer, the hardware layer, the OS layer, the software layer, the control layer and the application layer and you let each of those evolve at their own speed, that's when the innovation kicks in. 20 years ago, when mainframe was broken down into an X86 architecture, none of us knew that a server could be used as a load balancer. The load balancer guys figured out hey, why don't I take this and write software that gives it a personality. That's what we want to do with the switch because you want to give the personality of these things in an open environment.

So in my view, again three layers, trying to keep it simple. The infrastructure layer, completely disaggregated and you have a whole bunch of open source and open standards and OCP, ODL, OPNFV, ONF, [FC] this that, you name it. It will happen.

Then you have the middle layers, the middle layers with API, software orchestration. There's various lines and I don't even want to list them down. And then you get your services that get standardised on the top.

And then we have to figure out how to interwork that, but if the layers are disaggregated at the right APIs, we're good. So that's the fifth disruption.

Then what's next? What's next is security. We've talked about enough in the previous panel and the one before and it's a very simple thing. Technologies will come and go. You need to look at it holistically from end to end, not just at a firewall or at a point in the network. You've got to look at it holistically. And you have to do it in a proactive manner. So that's kind of key.

We've talked about IoT with the previous panel. It's coming. What do we need to do? You need to get ready. The infrastructure and all three layers need to get ready. The middle layer, services and the infrastructure, we need to get ready for IoT. It's very different. Devices don't come on a network and stay on the network forever.

Some of the use cases are millisecond. They need to be on the network, registered, data taken and then brought out, a millisecond and you're done. You're not going to sign a 4G contract with a carrier and get out in days, forget months. So the usage pattern is very different, so you have to account for that in all the three layers.

And I think as a summary I still believe that more of open, more of breaking the proprietary barriers and walls will come down. We've got vendors like Dell and others that are supporting this big time. We've got the whole ecosystem behind this phenomena. And you have customers asking for it, which is the best part of it.

I don't know if you guys know but OPNFV which is an open source kind of carrierled consortium, the requirements document for OPNFV is written by 25 engineers from the carriers. We don't even have a say. Vendors don't even have a say. We kind of do, but we don't. So I love that because that's what they're saying. You've got to be open, here's the requirements.