NETEVENTS

EMEA PRESS AND SP SUMMIT

FINAL

Debate IV:
Getting the Cloud Infrastructure Right
It's Neither Easy Nor Intuitive

Chaired by: Emir Halilovic

Research Director, Telecoms and Networking, EMEA, IDC

Panellists:	
John Bukowsky	Group VP & GM, Citrix
Hamid Lalani	HP Networking - GPLM
Nigel Oakley	Director of the Cloud Center of Excellence (EMEA), Juniper Networks
Jorg Ruhmann	Senior Technical Director, EMEA, Infinera

Good morning. I think we are just about to delve into a topic that is I think best characterised by what the learnings are from the cloud journey so far and what are the issues that companies face when transforming their networks and their infrastructure to adhere to the demands of the cloud. And then further how the companies that help them, or that provide the infrastructure are seeing that transformation.

So anyway, getting the cloud infrastructure right, it's neither easy nor intuitive. And it's not easy we know, but we'll see about the intuitive part. One of the interesting things that I've read recently was by a press journalist, an article saying and starting off with the premise that cloud is a fad. Very interesting considering the actual numbers that we see here in cloud adoption.

Now we have seen in this survey, which was conducted late 2013, results coming out in 2014, that actual adoption of cloud among all sorts of different, small, medium and large enterprises across Western Europe ranges from 70% to more than 80% for public cloud services and for private cloud services in a much wider range between 55% to 80%. And this is, let's just be clear, a very wide definition of what cloud is.

So going from simply using the email in the cloud all the way to moving most of their applications to the cloud, in both private, public or hybrid.

So cloud is real and it is happening. And this specific picture is western Europe but it is also applicable to other regions in the world obviously. So some are faster, some are slower and we think that Western Europe is in the middle.

And also what's important to understand is it's not a static picture. We have a kind of maturity model that we apply to the cloud and when measured by that maturity model this sample of companies that we have surveyed is kind of clustered in five different stages.

And as we see here, late 2013 the situation was like this. And obviously within each of these stages there are different issues that companies are facing and obviously there is different guidance which we provide to these companies that are catering to the enterprises that are on their cloud journey.

So how does that reflect on the network, the situation that we have so far.

The impact of the cloud can be measured obviously by different measurements, and what we see is that the network usually needs to be re-architected. And these are the reasons that we have found - this is a bit older survey, but we are about to repeat it. The reasons that we have found can be grouped probably into two wide areas.

One of them is, the second one here, around the bandwidth which is obviously kind of a generic growth which you are experiencing in the datacentre traffic and reflects all the need for more bandwidth in the datacentre. But then of course there is a whole bunch of issues that arise coming from the network becoming a bottleneck. Simpler, easier, faster provisioning; reducing the amount of time etc. etc. And all these reasons hint at the need for more thorough reshaping and revising the infrastructure as to be able to accommodate the needs of the cloud infrastructure.

Let's look deeper into what are the actual issues that companies face when they have to re-architect their networks. Manual or slow changes, resilience -- it's not only about the fact that you face these issues. But you also face, the enterprises face the terrible reality that if you want to touch it, if you want to change it, you can easily break it. And that's I think a pretty scary notion. So again underlying the notion that changing the network isn't easy and about the intuitiveness well, we will see.

So that will be it for the introduction and I'm going into the panel. We have a panel which is mostly composed of vendors. So it is going to be mostly about their experiences in helping their clients actually deploy the infrastructure for the cloud. So let's start with John.

John, from Citrix's point of view what are the main learnings that you have had while helping the clients with their cloud infrastructure?

John Bukowsky

First I should probably set the stage, just a little bit what we offer in cloud infrastructure. You could categorise it in two big categories. One is the physical

aspect of the network technology that we provide and then there's the cloud orchestration and software [inaudible] that we provide. So on the network side, NetScaler, ADC controller. It is actually an original base built for cloud scale computing.

Today, if you think of the big [inaudible] in the world then NetScaler is deployed in those [servers]. A significant amount of Internet traffic that goes through NetScaler today.

On the software side, we have an orchestration tool called CloudPlatform. You would know that as CloudStack today because of the recent purchase that HP have gone through. There's basically two open source orchestration engines available, OpenStack and CloudStack. And [inaudible] for CloudStack and we call it CloudPlatform. And then obviously we have XenServer for [hybridising].

So our experience is that one of the big things is being able to scale quickly. And so we've evolved the networking side with our NetScaler, the ability to have rapid scale-out capability and as well as consolidation, so fewer boxes with greater density, greater performance and having a direct interface to cloud orchestration engines, so that whether it's OpenStack or CloudStack VMware's NSX, as we're building clouds using orchestration engines that our network is able to interface directly with that orchestration and allow scale out and that in one of your slides was one of the important factors. So it's something that we've been able to address.

Emir Halilovic

And just one very short question that came to my mind. So ADC, how does it actually react to this kind of cloud proliferation? How is it for Citrix? Is that actually a growing business? Is it booming? What are you seeing?

John Bukowsky

So thank you. Actually because of cloud proliferation, both private cloud and public cloud, our ADC business has grown substantially because we were built for Web 2.0 applications in the original days back in '98 when NetScaler was acquired by Citrix. The market share growth of NetScaler has been phenomenal. So we sell into other clouds as well as private clouds and as enterprises are building AWS scale clouds in private, both from our orchestration tools CloudPlatform as well as our ADC, we're seeing explosive growth.

Emir Halilovic

Great. Hamid, HP obviously is much wider than network, than just a network. What do you see as let's say, the main issues that your clients face when deploying cloud? And what do you see as the focal point? Is it around private cloud build? Is it more hybrid? What is the actual stumbling block or main pain point which you face?

Hamid Lalani

As you rightly pointed out, HP is a much bigger entity and to provide context, let me explain where I'm coming from because HP is 300,000 people and I'm one of them. I come from a business called HP Networking which is really the Layer 2 to 3 to 4. And HP of course is right from Layer 0, we actually do the research of optics right up to Layer 7 where we do security applications and load balancing and things like that. I obviously represent the networking part of the business and my perspective will be biased by my little small world inside HP. So I by no means represent the entire HP view.

But I do listen to all the HP press releases just like everybody else does. So I try to read the bigger message. What we have found is that there is now a consensus that different customers and different enterprises will move towards the cloud at different paces. Not only based on what their drivers are, but also from where they have started.

So if I am [inaudible] and I don't have a dollar worth of investment in Cisco equipment, I'm not going to buy another dollar worth of equipment from Cisco. And I might go straight to the cloud and do that [inaudible]. But if I have a huge investment base, if I'm Proctor & Gamble and I have this huge investment, I'm going to start from a different place.

There's also another level of consensus that because it's never going to be greenfield it's always going to be brownfield, so the hybrid architecture, a combination of where you are and where you want to be is going to be proposed. But these shades of grey can vary from different companies.

What we have found is and my perspective is really from the enterprise because HP Networking sells to enterprises not so much to network operators or service providers. And what we are hearing from our customers is that they are less interested in the concepts and the ideas of the cloud and the power of the message. They are more interested in how can you solve my problems. And problem solving is driving their decisions.

So what we have found is that a lot of customers or 90% of the customers are going to do more like a hybrid cloud approach and they want to first start with what they've got. And so they are transforming their existing networks, to use the principles and the ideas of software defined networking to become more agile. But they don't want to stop there. They want the ability of a software defined solution, to not only go from enterprise, but that the same solution should work when they make the transition to a cloud and go through that service.

Emir Halilovic

Sorry to interrupt. But is it actually possible in all cases, in most cases to actually go that way, to start with whatever you have and quickly to utilise it. Don't you have to really make a move through a forklift upgrade?

Hamid Lalani

Most companies will tell you that if your answer is a forklift upgrade, hang on, send the next guy in. So most people don't want to lose the investment they have made. And obviously HP doesn't go there and say, just take all your stuff out and we'll put your new stuff in. That only works for one other company. It doesn't work for us.

What we have found is that you essentially make the transition by introducing the idea of a software defined controller. And if your application works on that -- let's assume that you're solving a load balancing problem. If you have a load balancer that actually makes the software defined controller because now you have separated the control plane from the data plane, you have solved that problem in the enterprise, that same application can now be on a [V] switch in a cloud and the customer has the same UI and the same user interface. So they were using that application inside the enterprise, now they go to a private cloud, they can use the same thing. And there is no reason why that same application cannot be run in a public cloud.

So they want the user experience to be the same, but at the same time they want the elasticity of the network. And so we believe that if you can provide a customer with a solution that solves his problem and then takes all the advantages of cloud but orchestrates away all the complexity from them, then that is something that they want to do.

Emir Halilovic

Okay, so solving the problems. Nigel, you're not solving the problems only of enterprises, but enterprises, public cloud providers, telco cloud. What are the main learnings for those segments in your practice?

Nigel Oakley

I think there's been an interesting dynamic going on in the evolution of cloud technologies and the networks that support cloud platforms. Just a little bit of history. If we go back to where SDN started, probably what two and a half years ago roughly, then there was a premise at the time that there was going to be some single protocol [inaudible] that was going to provide the control plane. The switching was hoping to be extremely simple, very low cost, very basic technology that was going to [inaudible]. And life was going to be perfect and everybody will be happy.

It didn't actually pan out quite like that. As always with the networking industry, more complexity got overlaid. So we saw more protocol being developed and more protocols being innovated. VMware went down the VX LAN routes and typically the more OpenStack, CloudStack world you see, [inaudible] you see PTP protocols.

And that started to raise a whole series of questions about how do you interconnect these environments? How do you plug [inaudible] service in? So what's actually started to happen is that customers today, who may not be implementing cloud, but are evolving their infrastructure are having to make decisions now about what infrastructure they buy and then bet on what protocols they're going to support going into the future.

So actually, it led to a shift in the way that certainly Juniper develops its products which is to develop switching capability, that has a wide range of flexibility in it. So if the customer decides to go down a VX LAN route then we can accommodate the challenges and the data plane that VX LAN proposes. If you're going down the MPLS route, then we have the ability to be able to turn [inaudible] and do all the control and data within the switch itself.

So we've actually seen a shift away from this concept of simple and we're moving towards an environment where the customers are asking us for a very wide range of flexibility to be able to accommodate a whole range of potential different options that may or may not be foreseen at this moment in time.

Emir Halilovic

So the complexity is actually increasing?

Nigel Oakley

I think in the data plane, the complexity is increasing. There's two things going on at the same time. There is a complex protocol environment that exists within the data plane. But what the SDN control plane is doing is [obstructing the way] of the presentation of that complexity. So what we're seeing is much simpler abilities to be able to influence the underlying network using APIs, ultimately presenting a single API to be able to deliver the services.

But don't underestimate what's going on in the plumbing because that's complex stuff. And that will pretty much carry on being complex stuff which if you'd listened to the presentations earlier that were talking about the challenge in terms of skills, so what we're seeing is diversification of the skill requirements for people to be able to support both. To understand the complexity of the data plane environment, but also to be able to understand the control plane and the [higher orders] which has resulted probably in myself in Juniper, I would say, a lot of the [trade] appear to be hiring unicorns these days.

Emir Halilovic

We'll get back to unicorns right after we hear how actually cloud infrastructure and cloud proliferation affects the Infinera's business especially around transmission. We have seen one of the examples, the datacentre interconnect probably mostly driven by cloud. Are there any others or maybe expand on that particular issue?

Jorg Ruhmann

Well, I think as [Mike] already explained, it's a new set of requirements for data centre interconnectivity. So you have the [non-OPs] and you have the major [OPs]. And so I think and Mike mentioned that he just launched a new purpose built product which you see [inaudible]. And I think it's interesting if you see back some years what we had in the past was kind of [optical] transport built for telcos, the traditional telcos which means you have to support lot of protocols, you have to be carrier class,

you have to have network management systems. And so they really have been optimised, which has been operational though it's a little bit more complex but offers a lot of flexibility.

If you go back to the datacentres, right now what we're seeing here is really maximum scalability. We're talking about hyper scale because if you see the numbers, some of you were talking about 2,500 [100G] just in the datacentres. So the set of requirements change and it's getting so much of a big market that the products will change in their purpose.

Right now if you look at the characteristics of a cloud [inaudible], it has to be stackable, it has to be low power consumption and extremely easy to operate. So the way of running an optical network has to be different and corresponding to exactly the same requirement that you set up with scalability and conversion. So for the middle point, we see something extremely simple to operate. You just [inaudible] technician [inaudible], you just slide it in and you get like 200 [inaudible] of capacity that you can software provision. So that's one set of requirements just to simplify the high complexity because all the datacentres [inaudible]. So not complexity, if you don't have to run all the capacities coming up. You cannot have so many optical experience engineers.

For the telcos, it was different. They're running like [inaudible] approaches because it's fairly complex, because they have the manpower and the knowledge. The datacentres, they cannot complete greenfield newcomers [inaudible] transmission. They're not tied emotionally to all the recommendations, to all the norms that they have. They're kind of free. They have a kind of greenfield approach, a clean slate approach. And so the requirements for them to us as a network platform manufacturer are complete different. And they're getting so much up to a critical size that we're changing our way of dealing with them and producing products for them.

So I think that kind of two ways evolving. You have the Googles, the Amazons, which are very innovative and quick. For them quick is more important. And then you have the telcos which are more traditional which has a legacy which is kind of a whole set of different services. So I think, we as Infinera, we had -- traditionally we have been successful in the [long haul] because we're kind of embracing the simplicity and the scalability already through our core element which is the photon integrated circuit. And we will kind of evolve and embrace it even more for the datacentre and the connectivity which is a big market.

But I think it suggests really the paradigm change in how to do optical even if it's -- but it's always the [inaudible]. But the operational context around it is changing quite dramatically from full protocol to support, to more [reputation] model, up to the data centre interconnectivity which has different set of optimal requirements.

Emir Halilovic

So it is changing and it's pretty fundamental. And what that change brings is I think we have agreed in our previous discussions, is a shortage of skills or let's say, the need

for transformation of skills in the industry. Would you agree on that? Is there a consensus that we have? Show of hands?

Hamid Lalani

In terms of human resources and how we manage networks? I think that's fairly -- I think we were discussing this earlier at breakfast or something that just like software engineers go from Cobalt to Fortran to Java, now the Python, people who have learned CLI all their lives will have to move on. And I think that is just part of life.

Emir Halilovic

And we're basically seeing in fact the need for the workforce to understand at least two if not more areas of expertise. Is it like that John, maybe from your angle? Is it a bit different from the others?

John Bukowsky

I think that's accurate and [inaudible] all my colleagues, it is a consistent thing. So the skill set, there is a different skill set. The good news is that with the number of public clouds, I'll pick on Amazon or SoftLayer as an example, they've really set the standard for how clouds can operate. And private clouds are adopting a lot of that same technique. As a result we've all made it easier.

In the case, Hamid said something that was really insightful about how in a private cloud, particular solutions like ADCs would be used. And you'd give the individuals who haven't experienced of using that ADC, the interface associated with it. The interfaces are becoming easier and easier and easier. We're all developing simpler interfaces to the point that you no longer need to do CLI.

Well, that same interface now moves into a cloud, a public cloud. So you have a private cloud operation, you understand that operation, and you need to scale up. So like in our case they'll use start scaling in a private environment in an enterprise, that same NetScaler can be purchased at SoftLayer or Amazon or other clouds, the exact same interface, the exact -- and they'll just scale out. And a lot of it's just auto scale.

So whereas before you'd have to have a human being doing a lot of the work, a lot of the auto scale capability is being developed by way of the inter cloud. And more -- I think you'll see a lot more inter cloud capability which will address the resource, lack of resource and understanding. So automation, SDN controllers, [NFE] are part of scaling capability, will be a part of how clouds are deployed.

Emir Halilovic

So being mindful of time and we are pretty close to the wrap up, just one or maybe two questions from the audience. If not, I can continue with mine. Any questions from the audience?

Well, to just continue with this, Nigel specifically with telcos because we were talking about that too. What is the change that the deployment of cloud infrastructure brings to their organisations from your perspective?

Nigel Oakley

Well it's really picking up on I think our previous conversation, one of the interesting developments with cloud and SDN. And this has been typically the history of networking and the IT evolution through history is that it starts to break down barriers between organisations. So if you take telecom operators, they're fairly rigidly organised typically. You have a network organisation, [NT] organisation, you have an IT organisation. What SDN is starting to do is it's starting to blur those boundaries.

So what you're starting to see are networking people start to, in effect bleed into the IT domain and the IT people are starting to bleed into the network domain which clearly causes challenges from an organisational perspective. Because where you previously had rigid processes between each of different organisational entities and telcos what you see is you start to see conflicts in those processes and potentially conflicts in those organisations.

So what I'm tending to see is the advent of SDN and cloud also leading to organisational change within service providers and in certain cases starting to produce more flexible organisations where the provisioning of services flows across these organisational boundaries without having to take complete steps between each of them.

So as always with ground-breaking technologies, there is a business transformation component that goes on as well. And I think that's one of the things we'll continue to see as cloud technology starts to come into play in the traditional telcos is this breaking down of these [silos].

Emir Halilovic

And for the closing question, Jorg it was very interesting the perspective which you gave us around some of the users of your equipment moving closer to the IT type of using the equipment. Do you see that trend continuing in the future and opening more space for the companies like Infinera and other vendors to actually take a higher role or take a greater role in managing that equipment or adding more service component to it in this transitional phase?

Jorg Ruhmann

Well, I think exactly what we're seeing is that in order to manage the scalability and if you look on the datacentres and what we're seeing in the discussions here all the time, it's a kind of shortage of skills already. And it's very difficult that you find engineers that can really understand from the IT perspective down to the network aspect, so various aspects. So in order to make the entire SDN story, which I think is really good and it will be transformational, to make it successful we need to hide complexity at different levels.

And as you have seen on the slide from Mike, there are really [inaudible] Layer 3 to 7 and Layer 2 [roughly]. So which are kind of two major pools. And what we have to do is [inaudible] we have to hide complexity and make it very simple and then a server like [IP like] interface. [Very similar that it's] physical transformation has to be

transparent for them and very easy to operate. It shouldn't have any knowledge required for optical [inaudible]. That should be -- our kind of task, my task is to make it simple. We have already done it in the past with this product we have that's a real low touch with [inaudible] automation and so on and so forth. But I think this request for simplifying high complexity in order to manage the scalability will even increase in the future.

Emir Halilovic

So hide complexity and help personnel actually to migrate and span both IT and let's say networking.

Okay, so on that note everything starts and ends with a properly qualified workforce I think, I will wrap up this conference. Let's thank the panel with a short round of applause and thank you all very much.

[End]