

# NETEVENTS 2015 CLOUD INNOVATION SUMMIT

**DRAFT**

*Debate Session IV:*

*Four Five One - Thinks the Cloud Has Just Begun*

Chair: Sean Hackett

**Managing Director 451 Research**

Panellists:

Angus Robertson	VP Product Marketing, Hubble
Mark Showalter	Senior Director Corporate Marketing, Infinera
Sebastien Jobert	Co-Chair OpenCloud Committee, OpenCloud Connect Forum
Ev Kontsevoy	Director Product, Rackspace
Dave Hawley	Global Product Manager, HP

Right. So I'm going to start, I'm going to try to get through this as quick as I can. I've got the "thinks cloud has just begun" topic here and I'm sort of a cloud cynic. I work for 451 Group but I'm Vice President of our Advisors practice which is essentially a strategy consulting firm within a research organisation. So we provide consulting services to enterprises that consume cloud services, so we help them a lot with organisational structure and process work etcetera. We also do a lot of work for the investment community, so we have a lot of VCs and private equity firms. That probably constitutes about 60 percent of our revenue. And then we do a lot of work with managed service providers and vendors. So a lot of the insights here today, I don't have a lot of surveys and forecasts, but a lot of what's here is generated from my learnings, again working with end users and investors etcetera.

So I heard a couple of things today that sort of piqued my curiosity. You know, forecasts and numbers; \$100 billion for cloud, I sort of scratched my head. I'm just not sure if I see the \$100 billion. I guess if we expand the definition of the cloud wide enough we can probably get to a number that looks like that. And then in terms of the adoption of cloud services, I guess it would be the same thing. I mean if we expand the definition wide enough, if we could get to 80 percent or 90 percent of enterprises that are consuming cloud -- I don't really see it. But I think, obviously from the

vendors that have talked up here, from a technology perspective, there is surely a lot of innovation that's happening. And I think when some of the -- I think there will be a tipping point and I think when that adoption of true cloud services happens, there are a lot of firms that are going to be disrupted and left behind.

So I always pretty much start the presentation with this African proverb and it essentially says you've got to wake up and run. So it means that service providers have to continually innovate and folks have to continually innovate. Since 2000, 52 percent of companies in the Fortune 500 have either gone bankrupt or were acquired or ceased to exist. All right? So we've seen this happen in other industries and it's not unique to cloud. And I think when that disruption happens it's going to be fast, so firms have to be ready.

When I look at the cloud market, and again from the perspective of consulting work that I do with enterprise etcetera, I think we are definitely in the midst of a transition. I think the cloud is definitely sort of growing up. When we started spending and adoption was largely driven by the SMB, capially constrained organisations that didn't have access to infrastructure. They wanted a level playing field and they went to Amazon where definitely good enough services were cheap enough and fit the bill. A lot of shadow IT, a lot of Net new applications, even those Net new applications were still being built, but I think those were the characteristics that largely defined the cloud 2012 and maybe prior to that.

If we look now we see this phased transition happening; if we talk to a lot of the VCs and the investment communities, a lot of capital being pushed into this, the hybrid cloud or the platform that sits in the middle which is really enabling enterprise demand, mission-critical applications, etcetera to be ported into what people call the cloud, right? So now you look at spending and adoption largely being driven by the enterprise. I think IT is exerting a little bit more control because the nature of the application and workload has changed a bit. Definitely the competitive landscape has changed with incumbent SIs and systems integrators and managed services providers looking to co-op the definition of cloud and move into the market. So I definitely think that there is a change underway. If you follow the money and you look where enterprises are spending, they're definitely moving more revenue from on-prem to off-prem. And some of that -- and most of that money is really, from a cloud context, being navigated toward hosted private cloud which is a fairly rough definition of what I would think of as a traditional cloud environment.

In terms of the applications and workloads, I know this is sort of an eye candy chart; it's tough to read here, but what it says is, hosted private cloud is kind of business ready in terms of the way enterprises think about their workloads. When you think of public cloud, the workloads of non-I/O intensive, you know, high compute intensity, variable usage, really workloads that make the best use of cloud economics who are really candidates for the public cloud, and I don't think that's changed much. But this private cloud definition has spurred a lot of enterprises to say that they're starting to deploy more of these mission-critical apps in the cloud. And mission-critical is tough to define, really because -- email is pretty mission-critical and most of us can't live without email.

So when I started out it was cloud is in the very early stages; I think it's just begun really. If we look -- I drew an analogy here of the automobile industry, moving from the horse and carriage to the automobile. Innovation took a detour, right, and we created this thing in the middle called the horseless carriage, because most people that drove in horse and buggies wanted something to look and feel like what they were accustomed to, right? So they put this wooden horse on top of the buggy and they had a sort of engine in it. It was the detour on innovation toward what is now the automobile, right? And what I do, I equate that here to private cloud. So I'm talking a lot about infrastructure here, because I had to pick something. So if you think about this horseless carriage, this detour in innovation, I see the same thing happening with private cloud. If you look at hosted private cloud offerings today from incumbents, it's hard to tell the difference between what a hosted private cloud offering is and what a traditional, managed dedicated service is. They've just co-opted the definition and called it cloud. If you look at some of the characteristics, complex pricing models at the bottom, that's Microsoft's algorithm to compute pricing for hybrid -- I mean for private cloud; not simple, not posted on the website, not on demand. Most of these offerings are more predictable pricing models, things like minimum monthly commitments, higher cost over public cloud models. This isn't -- we're really navigating away from the original innovation and it's a natural reaction as a lot of these incumbent providers look to push offerings towards their most profitable customers and they co-op the definition of cloud.

And we talk a lot about the inhibitors of cloud and why I think we're really at the beginning. A lot of talk about security. And I think security definitely is an issue. I think some of it's overblown; I think a lot of enterprises think about security as more transparency and compliance than actual security the way we may think of it. But that kind of misses the point; people rob banks because that's where all the money is, right? So service providers, although they have more capital to invest and they hire the best security people, that's where a lot of the data is. So they are natural points of -- targets. But I think the real -- I think a lot of people don't talk about the real inhibitor of cloud and that's some of the softer things that go on within an organisation, things like [politics] and budget, time and staff, they way they're organised. Let's face it; a lot of enterprises just aren't organised to procure cloud in an on-demand fashion. They're asking service providers to actually give them a year's full of capacity up front. They're asking them for ten year contracts to match refresh cycles on their equipment. And a lot of that again has to do with those organisations and processes are constructed; it's going to take a long time to work through that.

Another thing is there's a lot of complexity going on. CIOs are tasked with going from standardisation to orchestration, this is super messy. And they're doing this as a precursor to public cloud, right, or hosted cloud offerings. This involves a lot of re-working of the organisation, but it's a lot of technology work too. Things like virtualisation is hard. And then -- so getting from A to B here is pretty tough and a lot of CIOs spend a lot of their budget, a lot of their time and effort trying to condense this cycle before they really make a concerted move to the public cloud. So what have we done? We've given the OpenStack. We said, hey, go and deploy this. OpenStack is pretty tough and it's pretty complex, so we've only increased the

complexity. It's got to be simpler. I'm sure some of you have heard the story about the NASA Pen? NASA spent \$12 billion building a pen that would write in zero gravity and the Russians just used a pencil. So, I mean it's -- this is easier; there's an easier way and we're slowing down the process by adding to complexity and we're not fixing the real problems of organisation and the structure of the organisation and how they allocate time and budget etcetera. And those are significant inhibitors of cloud adoption.

So when I think about the cloud I think of it a couple of ways on how this can play out for service providers. One, they can win the race to the bottom and there are certainly a lot of firms, innovative firms that are moving in that direction. I don't necessarily think it's bad either. I think there's a lot of telcos that won the race to the bottom and they throw off a lot of cash. That race is on and there's a lot being done to commoditise and there's a lot of service providers that are taking advantage of that. And I think more will happen. We've talked a lot about open standards and APIs, further commoditising things lower in the stack, things like cloud exchanges and more transparency about pricing and the ability to compare pricing etcetera. But there's also going to be a number of firms that are going to have to differentiate and that's going to be tough, right?

So, again, sort of the first thing that could happen is this could play out like the dairy farm market. I'm sure not a lot of you watch the dairy farm market but it's really an interesting market and there's a lot of analogies that can be transposed on to the cloud industry. The number of milk producers over time has actually dropped by 95 percent but the output of milk has increased by almost a corresponding rate. Why? Because the biggest scale providers that had the most capital were able to invest in building the milk machine. They did -- they could do things like advanced [analytics] and provide big data insights to provide and identify the genes that would essentially create a milk machine. So what you had is you had a small number of dairy farmers rapidly increase the production of milk; a lot of dairy farmers went out of business. So the race to the bottom is going to be a perilous one. There will be some that win, there will be a lot that lose. But at the same time there's a ton of innovation that's happening. I would argue that a lot of that innovation is happening in the consumer market, but I don't see -- the Coke's of the world and etcetera, I see them leveraging innovation to interact with their consumers, but on a B2B perspective, the enterprise, not a whole lot happening. I mean, I think in terms of the way they're adopting it, I think it will happen over time, but there's a lot of opportunity for service providers to partake and to build infrastructure that's purpose built to really handle the innovations that happen on top.

And there's some really cool stuff that's happening. You can get food on demand, again a consumer thing. The picture here is a picture of Disney World's parking lot. My brother runs a hedge fund and they do a lot of work looking at the parking lots of Wal-Mart and Disney World etcetera and they compare against history and they try to predict the quarter. There's a lot of interesting things happening. And, at the same time, there are some innovations that are happening on the data centre side, not as

sexy, but that's really being positioned to help build purpose built infrastructure to support some of these innovations, but again it's just slow to work its way through.

So that's where I think the market is. I know it was a really fast drive-by because I don't have a whole lot of time, but I just want turn it over to the panel and get your reaction in terms of where I think we are and then some insights in terms of how you think your individual firms will partake as the market continues to evolve and innovate over time. So I'll start with Ev from Rackspace.

### **Ev Kontsevoy**

So thank you. My name is Ev, Director of Product at Rackspace and I agree with everything you're saying, but I want to provide a little bit more colour and invite everyone to step back a little bit and ask ourselves why are we selling cloud to our customers? Why do they want cloud? Like they actually used to have servers in their server rooms and things were running just fine, but there's probably some kind of need that we're pointing out and saying, hey, look at that, look at that. Come here and buy cloud from me. And this is what's actually happening; companies like Google and Amazon, because they have a lot of really, really smart computer science people, they come up with a way to do computing a lot cheaper. And everyone looks at these companies and say, oh my God, I want to be like Google; I want to be spending only 20 percent of what I'm spending right now on all of my computing needs. And here's a cloud provider, they're promising me exactly that. But what they're forgetting is that, yes, actually they might get some rough approximation to Google infrastructure, but they're not getting anywhere close to Google workforce. No one has developers like Google, no one runs security like Google. Very few companies can get even close, but it's actually a combination of the two that gives you that famous Google efficiency.

So therefore most companies, when they tried to become cloudy, what they mean by that is they're only getting the infrastructure part and even that sometimes is not even that awesome. But the rest of it is actually the same; they're running the same legacy apps, they're employing the same people who are simply not building true cloudy, self-healing, self-discovering applications.

And look at Rackspace; I was invited to a few calls for customers who would say, well, we have a big data problem. And I would ask him how much data you have. And they would say 60 gigabytes. That actually fits into RAM on a single server. Like most people don't even realise that their entire IT could be compressed down to a single Dell R720. Or, here's another even funnier example. I was talking to a company that there were designing the architecture for their expense reporting application with load balancers and redundant storage and what not. The whole thing -- and I'm an engineer, I can tell -- could actually run on the iPhone without even a server. Look, it has 2 gigs of RAM, it was actually a pretty awesome server ten years ago. And the application itself, like, expensing reports, is not that compute intensive.

I guess what I'm saying is, and this is kind of Rackspace's position on clouds for normal people, is that if you want to be cloudy, you need to have cloudy people, you need to have cloudy infrastructure. So at least, like the way we try to differentiate in

this world is, first, we admit that a lot of people go too far with clouds and we tend to offer managed services where we say, you run the business the way you've been running your business. You don't need to hire more consultants and professional services guys, but we would provide you with cloud engineers of quality compatible to Google. So we try to be the missing link. So yes, cloud infrastructure, that's not that hard, but cloudy people that's actually what most companies do not have. Someone needs to tell enterprise that they don't need to load balance, that they don't need to use complicated technologies. That's basically how we see it; just be pragmatic. That's what I'm trying to say.

**Sean Hackett**

Good. Angus?

**Angus Robertson**

Did anybody here read the Wall Street Journal article earlier this week that "Data is the New Middle Manager"? So Jean-Baptiste, yes? Okay. So the crux of that article was companies, especially start-ups, are not hiring; they don't need to hire middle managers because data is available and it can be presented in very visually appealing ways so that everybody in the organisation has access to the information they need to run the business and plan for the future of the business. So that's what we do at Hubble. We have a financial performance application that does integrated reporting, analytics and planning in the cloud. One of our customers, a sports promotion company, they have many different Excel spreadsheets, as I'm sure many of you have heard in other companies. And whenever the management wanted to understand what kind of revenue do we get from this particular fight, they got three different answers. It's such a simple question but they get three different answers. So by integrating the different data from their ERP, from Google Analytics, from DIRECTV on pay-per-view, at a glance they can see very visually, very clearly what any particular event or fight they got the revenue for. So in terms of big data and cloud, there's a lot of change happening here and it's having a pretty significant effect on some of the initial start-up companies out there and how they're re-defining how the overall enterprise is functioning.

**Sean Hackett**

Sebastien?

**Sebastien Jobert**

Hello; Sebastien. I am with Iometrix, Director of Engineering, but I represent here OpenCloud Connect where I am chairing the OpenCloud project committee, the testing initiative that you had an overview this morning during the opening keynote. So I certainly agree that this is the beginning of a cycle, of a migration cycle; certainly not the end. And I would focus maybe the thoughts on the migration of business-critical application to the cloud, maybe in a context that is not necessarily a greenfield, a case that you deploy fully application, but where you have legacy applications

running for larger enterprises. So if you compare, for instance, to another example, [tying in] to MEF, for instance, we had this TDM to packet-based network migration in the past and it was somewhat similar because migrating to Ethernet was not as deterministic as it was with TDM networks. And MEF did a lot of work around that to define services that are carrier grade.

So I believe that OpenCloud Connect has a similar ambition for cloud services, to define a common terminology and define basically trusted, carrier-grade cloud services that will help this migration of business-critical application to the cloud. Basically the way it's intended to be done is in a technology-agnostic manner, very similar to MEF. In the middle, you know, you can build your cloud service based on OpenStack, open source or other solution if you want. As long as we have a common understanding of the services and that the solution that you deliver as a cloud service provider meets the requirements and is fully understood by the enterprise that is buying the service, basically that's sufficient to help this migration.

So from the testing perspective, what we are building here -- and we expect it to accelerate again, this migration of business-critical application to the cloud -- is an iterative test [and arrangement] where various players can plug their components and test in an end-to-end ecosystem, not only just a few components but really the full end-to-end solution, the networking part, the compute part, and basically discover areas where we need to make some standardisation. So we think that it will help the migration to the cloud.

### **Sean Hackett**

Mark?

### **Mark Showalter**

Thanks. Hello, Mark Showalter with Infinera. You heard from Chris Liou earlier about some of our stories. You know I definitely agree that we're in the very early stages of the cloud. Now, if you look back at where we were with Ethernet 20, 30 years ago, and how far we've come with that, you never would have imagined we'd come this far with Ethernet today. If I look at the cloud and what's happening, I think one of my favourite stories to relate about the challenges we're seeing for adoption of the cloud -- and it's really a lot of organisational challenges that we're seeing in the enterprises that we're all trying to sell to.

So, as you heard about earlier, Infinera offers intelligent transport network solutions to carriers and Internet content providers. One of our customers, PackNet, has implemented our open transport switch for a transport-enabled SDN solution. It's the first commercially available transport SDN service where they're offering Network as a Service, they essentially let you, as a customer, order online, bandwidth, lots of it, different amounts, up to 100 gig, different increments. And they've recently been acquired by Telstra, probably one of the largest provider of services down in the Asia Pacific region, down in Australia, an incumbent there. They're expanding the offering. And one of the things they ran into as we worked with them to develop this service is we were able to set up a Web interface so that a customer could look at their network

points and decide I want to go between point A and point B and I need this amount of bandwidth. And then they're provided pricing on it and they can click and order the service. Sounds pretty cool; everybody's been talking about that forever. One of the things that we found in working with PackNet on this was that it couldn't be that automated. We had to insert a step in the ordering process where the system said, stop, you need purchasing's approval to make this happen. So that's just one example of how it's possible for us to get all of our information technology to become cloud enabled and the software to become cloud enabled, but there's still a lot of process work that we have to do on the back end of these enterprises to really enable a transformation completely to the cloud, so that we can buy cloud services without having to wait for purchasing to approve it. So we don't have to buy a ten year -- I couldn't believe that example that you need to purchase ten year's worth of services in advance. I mean, that stuff is obsolete nine months away.

So there are many, many examples of where the cloud is going to be able to change everything for us and accelerate the pace of innovation. We're seeing service providers today around the world struggling with how they can adopt this new DevOps model and move to rolling out cloud services. But they all see it needs to happen because they see all of their customers moving in that direction. The only question is how long will it take the rest of us humans to catch up to what the cloud can do.

### **Sean Hackett**

Yes. Just to build on that a little bit, I heard a lot about pushing workloads around the different, we call them best-execution venues -- so not everything is going to go to the cloud -- go to a variety of different delivery venues plus, quite frankly, a lot of workloads will remain in-house as well. So we -- a lot of our analysts write about that and we talk about that a lot. We went to a big beverage company and we talked about this notion of best-execution venues and leveraging orchestration to push workloads around and applying policy etcetera. And they tried to build out the infrastructure to support that; what are we going to do about regulation, what are we going to do about governance, what are we going to do about procurement, what are we going to do about the contract management. And the centre of excellence that they tried to build internally to handle that kind of environment almost made the advantages, from a cost perspective, go away. So they just haven't figured out how to build the right internal organisational infrastructure to enable all the technology innovations that happen.

### **Dave Hawley**

All right. Dave Hawley from HP. Just to give you a perspective of what we're seeing as an infrastructure provider and a services provider to enterprise customers, we're seeing people struggling with the challenges of implementing cloud, big data solutions, addressing security and mobility issues. And some of the trends that we're seeing is the consolidation or convergence of infrastructure; storage, servers, networking, which is really fundamental to building cloud. The edge of the storage network is is it the memory, is it the local disk, is it the centralised disk farms, this can depend on the application running. The same with the network; is it the virtual

machine edge, accelerated NIC card, the chassis or cartridge server fabric or is it the top-of-rack or traditional network fabric. So all of these things are driving a merger and consolidation of the different -- blurring of the different layers.

The second area where we're seeing a drive of course is in the cloud which is the virtualisation constructs of each of those elements. So the cloud provides that orchestration layer to direct and move those resources around to where they're needed and apply them in the best possible uses. And finally it's about the software defined data centre, so what are the programmatic interfaces that enable each one of those layers.

And I see a number of incumbents being successful in these transitions. We have VMware's logo on the back behind me for example; they've been extremely successful in server virtualisation. I expect them to continue to be successful as a proprietary vendor of cloud virtualisation technologies.

But there is another dimension which is around open source and open source doesn't happen unless vendors are willing to commit the resources, vendors and users, to make those technologies robust. As Linux has become standard, I believe the technologies like OpenStack, possibly OpenDaylight and other open source communities will provide the alternative infrastructure. And that's one of the biggest transformations for all of us, is working in a world of open standards, open APIs and open code. These become the framework for delivering the types of cloud solutions that customers are looking for, whether they're deploying it as a private cloud inside their enterprise, within a hosted or managed service of various sorts or if they're planning on pushing those technologies up into a public cloud service technology.

### **Sean Hackett**

So I guess I'll push it out to the audience for some Q&A. Any questions? Okay, then I'll ask another question to the panel. We all sort of agreed that we're at the beginning stages; I talked about the horseless carriage. I guess I'll ask the hard question let's push out five years from now, maybe even longer, what does the automobile look like? What is -- how do you see enterprises consuming cloud in the next five years -- maybe that's too short of a time horizon -- maybe ten years from now?

### **Ev Kontsevoy**

So I think there will definitely be a shift towards compute resources that are not measured in megabytes or gigahertz or megabits. Instead of thinking in terms of networks, servers and storage, companies will be buying capability capacity. For example I need a Hadoop workload with a certain throughput. Or I will need like a load-balancing for a certain number of requests per second. And how those things will be delivered I believe should be transparent to the buyer. So this would actually make cloud and cloudy technologies more approachable from enterprise perspective and will make pricing much simpler and much closer to the value that you're actually getting out of it.

**Angus Robertson**

I think it's all about empowering the end user. So that end user, whether they're an enterprise or just an individual, being able to get what they need, when they need and feeling comfortable about their privacy, their security, the performance of the service. I think Uber is a great example of this. Look at how they've turned over the transportation industry. However we've got some challenges before we can get there, so we, as an application in the cloud, we know how to develop applications but we don't really understand the network and how to deliver that. But it's kind of critical to our application to have a network that can deliver effectively. So for example, our application is hosted in Amazon but our customers are asking us not to be tied to one cloud service provider. And then we also have a database accelerator that's used by the application in Amazon and that mirrors data from multiple data sources, including on-prem and in the cloud, for example, sales force. But we can't today know the cost associated with that and we can't guarantee the quality of service around that. So there's a lot of work, I think, just from an infrastructure, and perhaps not necessarily the sexy infrastructure technologies, that need to be done so that we can get to that transparent experience for the end user and really empower the end user to get what they need, when they need to be successful.

**Sean Hackett**

Good. When you're ready.

**Hans Steeman**

Okay. Hans Steeman from the Netherlands. To what extent will neutrality have impact on the quality of service provided by cloud service providers?

**Sean Hackett**

Can you repeat that?

**From the floor**

To what extent will neutrality have impact on the quality of service provided by cloud service providers? So if you want to move all services in the cloud, and the connection between the end user and the cloud is not guaranteed, because of Net neutrality, what will happen then?

**Sean Hackett**

Anybody want to take that one?

**Angus Robertson**

I think even with Net neutrality, enterprises can still buy managed services. So there's still going to be that opportunity for enterprises.

**Mark Showalter**

I'd say it's still in the early stages of Net neutrality. There's a lot of conversations and a lot of statements that have been made, but the actual implementation of Net neutrality hasn't yet happened. And there's a lot of tension in the service provider world between those people that make the investment in the network and their right to get a fair return on it, versus those folks that would like to see every network be used freely and equally by anyone who wanted to use it. And I would argue that I don't think that that has really been resolved yet in terms of how it's going to legally impact these particular folks. I think there's going to be a lot of debate before that actually settles down.

**Sean Hackett**

Good. Thank you everyone. Thank you.

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