NETEVENTS

EMEA PRESS AND ANALYST SUMMIT

Guest Speaker Presentation: A Vision for Mobile Cloud

Speaker: Roland Klemann

Managing Director Service Provider Practice, Western Europe, Internet Business Solutions Group, Cisco Systems

My name is Roland Klemann. I work with Cisco IBSG and you all know that Cisco is the worldwide leader in networking for the Internet, but what is IBSG, the "Internet Business Solutions Group"?

I'm one of the few people within Cisco who is neither a salesman nor an engineer. I'm a consultant. I run a practice that consults with Western European service providers mostly on their *business* challenges. So we engage with CXOs on their business strategies and what we also do is we develop thought leadership around the service provider space. In that context, we have our own body of primary research, the "Connected Life Market Watch", that monitors consumer demand. I'll use some of that research in the next minutes.

My topic today is a vision for mobile cloud. So that's where two of the hottest areas in technology come together. On the one hand, mobile. Over 90% of the world's population now have access to mobile phones. On the other side, cloud, a new way of delivering and charging for a wide range of technologies.

I'll talk about three things. First of all, what is mobile cloud, secondly, what do users expect from it and thirdly, what does it mean for telecom companies, for our service providers? Who do users look to as providers of mobile cloud and what's the impact on networks?

So, on the first topic, what is mobile cloud anyway? We define it as *mobile services and applications that are delivered from a centralised data centre (maybe a virtualised data centre) to a mobile device such as a Smartphone or tablet*.

As we speak, probably half of the room is sort of working on mobile cloud applications and services. These services come in two flavours. Firstly, as an extension to fixed cloud services; so services that exist in the wired world. Secondly, unique mobile cloud services; things that can only exist because they exploit the features of mobile devices like the camera or the voice recognition and blend that with characteristics of mobility to create unique services. That means that the users are no longer tied to the capabilities of their device or to their application, but that the cloud opens up a whole new world of experiences; things like "dual persona" or augmented reality.

So in the last years, new devices have become omnipresent. It's interesting to see that a lot of you are still using traditional laptops here. In other conferences I've seen it that pretty much everyone had their tablet, or their Smartphone up there. The iPad as the leading tablet is selling like hot cake. Or we should rather say it's selling like a tablet, not like a hot cake. It's a marketer's dream. Apple has sold about 1,500 units every hour of that and they've seen a much faster ramp up than for the iPads or the iPhone.

And why is this important for mobile cloud? The growth in tablets and Smartphones will drive the adoption of mobile cloud services as an enabler and it will also drive the traffic across the network. Every tablet sold generates about three and a half times the traffic that a Smartphone does.

On the second topic, what do users expect from the mobile cloud? We've asked users and, as you would expect, mobile services are already today just so much more than voice or messaging. Cloud delivered services will explode over the next years. In fact, 70% of all users that we asked, and that's business and consumers, expect to consume these capabilities in the next one to two years, so it's a mass adoption, especially for all forms of videos, be it watching, recording or conferencing. 70% to 80% of the respondents wanted to use video features on their Smartphones or tablets. Also, visit and updating social networks will be a huge activity.

What we've also seen that mobile users want more than just the mobile access to what they know from their wired capabilities. They would like to experience new services that exploit the capabilities of the devices. For example, they are interested in combining the microphone and speaker capabilities of their devices to real time voice translation.

We also asked who will lead the adoption of mobile cloud and the answer may surprise you. It's actually business users. Business users are twice as likely to use mobile cloud services as mobile consumers today and it's business users who will be the key adopters of mobile cloud services going forward.

Why is that? Business people are already much bigger users of PC-based cloud services like photo sharing, like web conferencing etc and business users are familiar with the value of PC-based cloud services and that will make them adopt similar services over the mobile cloud easily. Business users will be big adopters of mobile conferencing, of document management and specific business apps.

So the vision with that is to leverage both the mobility and the cloud aspect to change fundamentally the way people work. Workforce productivity so far used to be how you can optimise individual output. Take all these individuals together and put all their output together and have a meeting to sort it all out. Now put all that functionality in a cloud environment, give the workers all the devices they want to use and you will have a faster, more secure and more cost efficient workplace. We are currently putting some research into that and we will be happy to report back on that soon what the future of the workplace will be, based on mobile cloud services.

So, for business users, the cloud will hold a huge amount of data and employees can access and run this data and collaborate in real time through Smartphones and tablets.

Often they will use devices they own themselves, so a big trend is what we call BYOD, “bring your own device”. People go to their enterprise IT managers and say I have a tablet, please enable it and normally the IT manager will say no, this won’t work until the CEO comes with his iPad, and then he’ll figure out how he makes this work. So we are currently seeing that with a lot of enterprises who are changing their paradigms here.

And we’re still in the early days of imagining what’s possible. Most organisations just support a few traditional mobile applications such as email or calendaring or contact management, but we believe that corporations can significantly improve their productivity with delivering key business applications on Smartphones and tablets.

I have five predictions. One is that the boundaries between personal and professional lifes will blur on the device. Professionals will use one device with dual persona capabilities.

Business users will secondly demand a unified experience from that.

Thirdly, we will see a shift from intelligent devices to thin-client cloud-based devices.

Fourthly, we will see a lot of virtual desktop integration (VDI) coming into this space where users want to replicate the desktop experience on their mobile devices, have greater flexibility, productivity and security from that.

And fifth, we will see that business users will routinely attend video conference calls on their mobile devices and that will be happening as of this year.

So much about the business users, what about the consumers? We’ve asked them on the features of services like iCloud or Amazon or Google services, what is attractive

to them. We've polled more than 3,000 consumers on that and among all the features, the capability to access data and applications from any device and anywhere is a key ingredient in there. You see: the mobile access to cloud offerings is one of the critical ingredients of any cloud service.

So why would users use mobile cloud services? We've asked them to single out *one* reason why you want to do mobile cloud. Surprisingly, it's not that through cloud, mobile devices get cheaper, it's not that there are no limits to functionality, it's not that the phone stays always current or that the memory doesn't limit the functionality. Mobile cloud actually makes people feel more secure! That may seem counterintuitive, security issues are normally slowing the adoption of new innovative services, especially in the network domain. Consumers are really concerned about data privacy.

While that is the case, consumers recognise the importance of mobile devices in their lives. I found a very interesting statistic on that. 19% of users admitted they dropped their phones in the toilet. So what happens if you lose all your personal data with that? It probably highlights the use of mobile cloud services where all the critical information is stored in the cloud. The media content apps are all in one place and whatever happens to your mobile device, may you flush it in the toilet or lose it, or you get it stolen, you can still access it. So that's obvious for users and they said the first reason why we should mobile cloud is security.

On the third topic, who do end users look to as providers of the next generation of mobile cloud-based experiences? When we asked consumers who they trust to deliver mobile cloud services, the one who came out as the winners were mobile network providers. They were the preferred provider of mobile cloud services by almost half of the respondents, dwarfing the less than 20% of mobile users who prefer web companies.

You may ask why are mobile operators so well positioned to deliver mobile cloud services. Well, generally, respondents were pretty happy with their mobile operator. On a scale of one to 10, they gave their mobile operator a 7.8 and the top reasons for buying is one, reliability of service. Second, they know the provider, they know the relationship. Thirdly, it's price. Four is the trusted brand. So mobile cloud plays to the operator strength. Network quality, customer service, security, data centre and network integration are the core competencies of some of these providers.

So what does it mean? In fact, it's an opportunity to shift the power from the device and OS ecosystem – so from the iPhone and Android producers – to the network and to the data centre.

If network providers play an important role in the delivery of mobile cloud, what should network providers expect?

There's one thing you should prepare for, mobile cloud applications multiply the traffic that goes on the networks. Here's just one example that shows that if you're

using a few mobile cloud applications, you will double your Smartphone traffic, so that puts a strong demand on networks.

That means, going back again to the Cisco VNI traffic projection, that we believe cloud applications will in the long run account for more than two-thirds, or 7.6 Exabytes per month of total mobile data traffic.

So you've seen the overall traffic projections that Rosalind had shared. This is a global picture. The picture for Western Europe looks by the way pretty similar. We've discussed that this is a double-edged sword for the mobile operators. Explosive growth of data traffic is not corresponding with revenue growth. Therefore, you will need mobile backhaul and technology strategy, pricing strategy and monetisation frameworks to be in place.

I just want to quickly repeat what we've seen. We see that 80% of the mobile Internet usage is actually nomadic, so it's in fixed locations. Like all of you are currently consuming mobile data, but it's not really mobile. It's in a fixed location and that's true in pretty much all of the countries that we have looked at.

Users will be really happy to use WiFi as an access method here. We've asked people how they spend their wireless web browsing time and that's a survey we've done two, three months ago in four European countries and North America. 50% of the time users use WiFi rather than the cellular connection. That's the user perception, not necessarily network data.

WiFi gives a few advantages to users. In terms of speed, WiFi is video capable. In terms of coverage, WiFi covers in building access. In terms of cost, WiFi is inexpensive. In terms of experience, it's the persistent connection and it's increasingly seamless. You'll see some announcement on that aspect on the upcoming Mobile World Congress, called "hotspot 2.0".

WiFi does the job for most mobile cloud applications and so users are even willing to wait for WiFi. We asked them are you happy to wait for WiFi rather than use the cellular and a third of them said definitely yes.

To sum up, mobile cloud is a new way to deliver services. It's pervasive. Consumers want the mobile cloud. Two-thirds are already using basic cloud services. Another 80% are hungry for new advanced mobile cloud services. Adoptions will be led by businesses and security concerns will help the adoption.

Network-based service providers have a great opportunity to shift the power from the device back to the network and to the data centre. For this, networks need to be ready for large amounts of mobile cloud traffic. Here, small cells will play an important role.

Thanks for your time. I'm now looking forward to the Q&A session.

Guest Speaker Interview & Audience Q&A

Manek Dubash – Editorial Director, NetEvents

Thanks very much Roland. Well that's an incredibly rich set of data there. I don't know where to start. Well I have got some thoughts here on where to start and I'm sure that the audience does as well. I'll just throw in two or three questions, and then I will throw it open to the floor.

Following on from the previous debate, the overarching thing that we've learned here is that there is going to be just this data tsunami. Now some of those on the panel earlier were arguing that LTE is going help resolve this in some way by being more efficient. Do you see that?

Roland Klemann

LTE will play a role in doing that, but it will likely not be sufficient to do it. So LTE is one of the areas. As I said, we believe about 25% of the mobile data traffic will be offloaded from LTE. LTE is part of the solution and all means will be needed to fight the tsunami.

Manek Dubash

Where does the municipal WiFi that you alluded to which will be part of this small cell growth, where does that shift the bottleneck to? How is that data going to get from those mobile WiFi on the lamp posts or whatever back to the network?

Roland Klemann

Well we discussed on wireless technologies playing a role here. The bottleneck will clearly shift more to the backhauling, especially if you look at it from a cost perspective.

From a cost perspective, if you look at the total lifecycle, up to 90% of the cost is operations and backhauling of the network, so that will increasingly be the focus of service providers in seeing how they can optimise their operations.

Manek Dubash

Where is the money for all this going to come from? At the moment, operators are already giving away free WiFi connectivity. My operator allows me to access any BT Open zone hotspot as part of my package, so there is no extra revenue for them there. Where is the money going to come from?

Roland Klemann

You will see a redistribution of value in the industry, but this is not what you're asking. You're asking for incremental revenues. There is a number of new business models out there. People are enabling new retail business models. For example, you can target your advertising depending whether you enter the IKEA store and you get the newest offer from IKEA. By that table today, 10%. Or if you're at the cashier, you are totally exhausted and you get a coupon for the hotdog at IKEA. So the location in the store will play a role and with more and more in-store capabilities, you will see that.

Coming back to mobile cloud, you've seen some of the services people are using. Essentially, you're asking whether the $100b IPO of Facebook is over-valued or not. We all may have an opinion on it and may or may not invest in that. Still I believe there's new business models out there enabled by mobile cloud. The thing that I firmly believe in is the business adoption. So increased efficiency in the enterprise will generate savings and some of these savings may trickle down to the operators again.

Manek Dubash

A company, an analyst firm that I've done some work with called STL Partners has developed a concept called two sided business models where the over-the-top operators in some way help to defray the costs or provide some income to the operators for all this tsunami of data they are providing to the user like Facebook, for example. Do you see a role for that?

Roland Klemann

You're opening a can of worms here.

Manek Dubash

Oh yes.

Roland Klemann

If you ask the service providers on that they will be of course big advocates of the two sided business model and I think it has some merits.

If you want all these new things happening, laying out a whole new infrastructure, I mean like the electricity grid 100 years ago, and you don't give any means of refinancing for the service providers, you expect everything to be delivered free, it just will not work. You're seeing that already today in the build-out of the ultra broadband fixed networks. It's just not happening in most Western European

countries. It's rather "fibre to the press release" than fibre to the home or fibre to the curb that you are seeing because there is just no business case for the operators. There's no single operator who can finance building up a fibre network in a country, so you look at the governments to participate, like in Australia or in Korea. Some European governments are engaging there like the UK, but in a lot of countries like Italy or Germany this is just not happening and that's an impediment to economic growth.

If you take the fibre rollout, we believe that rolling out ultra broadband fibre adds an extra 1.1% to the GDP. We're missing all that opportunity because we are not giving a means for the service providers to refinance, so that's an issue that will have to be sorted out.

Manek Dubash

That's a good answer and quite a lot of it. So I'm going to stop at this point and ask if anyone has any questions. I'm sure you do.

From the floor

You mentioned that consumers were trusting the mobile operators to deliver these services more than anybody else. In terms of business services, at least there are a lot of consumer-type services around. The mobile operators haven't actually stepped up to the plate yet in any great number. What's holding them back in your opinion? Why aren't they delivering these services?

Roland Klemann

I think the whole area of delivering cloud services to enterprises is still a big field of experimentation for service providers and it requires a lot of capability to be put together. You need to operate a data centre. You need to have the sales channel to the business market. You have to have fixed and mobile networks. A lot of the service providers are currently building the infrastructures for that. So we are seeing large investments in that with people like Orange Business Services, Telefonica, BT who put in massive infrastructure investments and once that's in place, this will be commercialised.

So I would think this hits the road in the next one to two years. Right now they are still experimenting and building up, so that's why you are not seeing that yet at such a large scale.

From the floor

Just thinking about WiFi offload for a moment, in some locations it's becoming a nightmare to get any connection to WiFi. I could mention one here. Certain airports,

it's a lot easier to get a connection to a cellular than WiFi. Whose responsibility do you think it is to make sure that WiFi works in such an area because there are lots of networks there but none of them are easily connectable? So who's responsible?

Roland Klemann

It's a great question. I think it ties to the debate who will control WiFi offload: Operator controlled, device controlled or user controlled? Of course, that's a huge debate whether the operator controls and monetises the offload traffic, or it's just free-for-all.

Right now, the technology is evolving in that space. It will have to do with the authentication and you will see that operators will exploit access priorities and monetisation opportunities. The technology is just not there yet, but we're seeing a lot of work on that behind the scenes.

Will we see it next year? Probably not. Mass market deployment, will we see it in three years? I would guess yes.

From the floor

A quick follow up. When you say access priority do you mean loss of neutrality of access?

Roland Klemann

Well, it will not work in all locations, but I was talking about the business model of let's say cable operators who enable the networks with multiple SSIDs.

If you are an operator who has that capability, what prevents you from giving your subscribers prioritised access on that network over other consumers and use that as a weapon to fight churn, to boost acquisition etc? That will happen.

Manek Dubash

So much for net neutrality.

From the floor

Last year Cisco had a tablet and you discontinued. Why did you do that?

Roland Klemann

It's discontinued? No, it's not. Cisco has launched a tablet, the Cius, last year. It's a tablet geared at the enterprise user and it's not discontinued. It's a product that serves as an endpoint for our collaboration solutions and it's not a discontinued product.

Manek Dubash

Since we're talking about end user devices, one point on your slide was effectively about device virtualisation and multiple personality devices. There is a huge number of challenges associated with that. Not so much I with technology, virtualisation is reasonably mature, but more to do with the usage patterns and how you move between them from home to office and who pays the bill for which mobile phone call and stuff like that. How advanced is that technology?

Roland Klemann

In terms of that technology or that behaviour? I mean you were alluding to it. It's not primarily a technology issue.

Manek Dubash

Well I suspect you'll need some technology to get around those issues as it were.

Roland Klemann

I think we are seeing a lot of experimentation in that field. I mean if you look at one of the predictions I had, video conferencing being used by a lot of business users in your private space, there is all sorts of privacy issues around that. We in Cisco are at the forefront of using our own products in that space and I've seen very strange situations in video calls with colleagues who were at home and you frankly saw things you didn't want to see. I think we as users are just not experienced enough around that.

I think it will take years to adopt behaviour. I mean like you adopted conference call etiquette and behaviour and how you integrated that productively, it takes behavioural change. Technology around that will develop suit and support that.

Manek Dubash

Thanks. Well one question I've got is I'm intrigued with the idea that obviously most of the problems that we've been talking about are to do generally speaking with the Western world, but obviously, as you alluded to, the rest of the world is also moving in that direction. What are the lessons that if you're a telecom provider in India or Indonesia or in Africa where the mobile is much more important what lessons do you think they could learn from the issues that have been raised in the West?

Roland Klemann

One lesson I think is if you're in a greenfield situation, which I think truly no operator is, but in more of a greenfield situation, one important element is the data centre element. So setting up an operator without a data centre capability and a service deployment capability around that is something that you shouldn't do.

Secondly, it's around the whole technology approach for the radio access network. We are seeing small cells being more of a solution to the mobile data tsunami than the microcells. So you can ask the fundamental question whether you want to deploy, or for what purpose you want to deploy a microcell-based network and you better integrate that, how you push the intelligence in the network further to the edges rather than the old hierarchical GSM structure having a much more distributed network whether everything talks with everything.

That's some of the key design considerations I would put in if I would look at a more greenfield operation.

Manek Dubash

Okay, thanks. Questions anyone? Really? Any final thoughts on what we've been talking about or shall we wrap this session now?

Roland Klemann

You can argue if there is anything like a *mobile* cloud or if the cloud is pervasive and mobile is just one means of delivering it.

I think what we are hearing and that's probably something I didn't underline so much is that people are really excited by the new ways how you can deliver services, where you exploit on the device capabilities and on the mobility. Things like augmented reality or like dual persona, like storing your shopping list in the device with a barcode scanner, going to the shop, getting coupons on it automatically, all these new kinds of new services. So that's where I think the innovation will come from and where it's exciting for the end user.

Manek Dubash

Okay, there you have it. All you need to do is go shopping. Roland, thank you.

Roland Klemann

Thank you.

[End]