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Round Table III: Calling Winners And Losers As Operators Add More Services

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Catherine Hammond

Well, good morning, everyone. Thank you for having me here today. I think Scott started yesterday by saying he'd been to many NetEvents. This is my first one, so I'm glad to be here. For those of you who I haven't had a chance to speak to yet, I work for a company called Analysys Mason. We're a consulting and research house. I work as part of our enterprise and IoT practice, and we have a lot of our customers amongst us, so I'm going to be talking this morning a little bit about value-added services from the point of view of network operators and service providers, and then we're going to get a little bit of perspective from some of the vendors on the panel this morning.

Okay. So, I wanted to talk about three things, really, by way of introduction around value-added services. First of all, just a little bit on the revenue opportunity for operators of value-added services. Secondly, around the importance of getting the basics right, basic customer care, basic good service on connectivity offerings, before you begin to add on value-added services. Then thirdly, I'll just introduce - and maybe we'll introduce

this more as a panel - some of the customer benefits of value-added services to the enterprise.

Okay. So, first of all, revenue opportunity and value-added services. This is taken from our market sizing model looking at Europe, looking at revenue to operators specifically from enterprises. So, this is not consumer revenue, it's not hardware revenue, not software licensing. It's what operators get for basic telecoms services and form some value-add ICT services. If we look at last year, we think operators got around about €93 billion in total revenue from enterprises. Of that, some of the value-add IT services accounted for around about €8 billion, so it's a pretty small number in the grand scheme of things.

However, the crucial thing is, it's growing. What we've done here is to track revenue growth over time from those two categories, so we've fixed them both at 100 in 2017, and looked to see how they'll change over time. So, the blue line there is the traditional connectivity-type services, and as you can see that's pretty much flatlining. We had some discussion yesterday around trade-offs between MPLS and SD1. I would say, broadly speaking, what I see is demand growing for bandwidth, and that's offsetting the price decline, some of the new technologies that are coming along. So, broadly speaking, we've got flatlining revenue. Enterprises are essentially getting something better for the same money.

If you look at value-add IT services, on the other hand, we can see that that revenue, although it's from a small base, that's growing over time, and that's where we see opportunity for operators who are, frankly speaking, under quite a lot of pressure to find new areas for revenue growth.

Many operators are already relying on IT services for revenue growth. We've been tracking operator revenue, enterprise revenue again, specifically, over the last few years. Not all operators report an enterprise revenue, and I suspect it's a slightly self-selecting bunch that do. We've found about 30 operators who consistently report enterprise as a share of total revenue, and of those, the 10 listed here - this is purely those - basically, those operators that provide the information - these operators break it down further. So, they say, of the revenue we get from enterprises, this much is from IT-type services. This much is from traditional services.

If you look at the green band at the bottom there, that's showing overall revenue growth over the last 12 months, and you can see that's slightly negative. That's perfectly normal for operators in the enterprise space.

If, however, you look at the yellow line, where you isolate the value-add IT services, that's growing at a pretty healthy 6%, 7%, in contrast to the blue line where we can see revenue from traditional services dropping away gradually over time. That's partly about data. That's also continuing to lose voice revenue.

So, there's a clear feed-through already into revenue from what operators are doing in this area. Some of it's around acquisitions. Some of it's around partnerships, building up their own capabilities.

Okay, let's talk about cloud a little bit. Cloud is a fairly common theme in value-add services. If you look at press releases, probably many of them read by you guys, around acquisitions, cloud, cloud, cloud comes up again in the language. So - we're looking here at cloud revenue for operators as compared to some of the tech players.

Now, obviously, the tech players in the dark blue here, they're seeing phenomenal rates of revenue growth, and from a huge base. AWS is the smallest here, but in absolute terms it's seen the biggest growth. Compared to that, some of the operators who have got cloud services and report on those are seeing maybe 10% to 20% annual revenue growth, which is still pretty impressive, but it's on much tinier numbers. I think probably Telstra here are a little bit of an exception. They cite this down to professional services and hardware in this particular year, so you may or may not consider that true cloud services.

Okay. I guess there's two conclusions you might draw from the growth in cloud. One might be that operators should say well, look, AWS is here, they're hyperscalers, they've got it all sewn up. Let's not try to compete at all. On the other hand, they might come along and say, well, actually this is so big and so rapidly-growing, even if we can only get a small piece of it, that's well worth having. We should try to get in on the action. What we're finding is that many operators are kind of going down a third path, and they're building partnerships with AWS, with Azure, and they're building partnerships to offer multi-cloud solution. They're majoring on the connectivity. Then, they're trying to offer more value-add services around that.

So, this diagram is an attempt to show a potential set of value-add services that an operator might have, and network connectivity, I think, is really foundational to that. So, the bottom there, you've got various flavours of connectivity, and that would include cloud connectivity and WAN connectivity. Then, on top of that, you've got a whole pile of services around datacentres, cloud storage and compute, and then at the top you've got the apps layer. So, there's some fairly generic apps, and some more specific ones.

What we're seeing from operators is that typically, they're tending to focus on ten more generic apps, the Office and the fairly wide-appealing collaboration tools, but there are one or two who are delving into it a little deeper. Swisscom, for instance, have taken a stake in an app development firm. Telstra acquired Readify, giving them some similar capabilities as well.

Then, running around all of these, we've got a kind of set of service wraps which give the operators the potential to perhaps create some higher-margin value-add services for themselves. So, we've got things around security, things around analytics and AI, and then running up beside, supporting all this, professional services, which I think are a really key enabler for many of the value-add services, and SLAs that fit around that.

So, I think network connectivity is foundational. I also think network connectivity needs to be really good if operators are going to successfully sell on. This slide is presenting some information from a survey we did last year, talking to end-user enterprises and looking at issues around customer satisfaction. I would argue the key components of any app value-add service offering is about getting the basic customer satisfaction right. What you can see here, we've evaluated net promoter score from the information we

got back, and we've categorised it separately for enterprises who are buying another value-add service - in this case, security - from their operator, and enterprises who are not.

So, on the left-hand side, you've got an NPS of around about 23, for those enterprises who are buying security from their operator, and an intended churn rate - it's quite low down - about 2%. On the right-hand side, you've got quite a contrasting picture. They're not purchasing security from the operator, and they're not very satisfied. NPS of 2, scarily, is not unusual for operators, and I'm not trying to say this is cause and effect. I'm just putting this forward as - and identify that there seems to be a linkage between how satisfied businesses are with their operator, and how likely they are to buy value-add services.

One operator who does publicly report on NPS is KPN. This slide is just tracking NPS score from KPN, and in the blue line - so, going up from minus 18 to minus 1 over time, and against that the rate of revenue growth that they've seen from enterprises. Now, both of these are negative, so that's not great, but they're both heading in the right direction. Again, it's not meant to be cause and effect, but there seems to be some sort of correlation going on between their improved focus on customer care and customer satisfaction, and their beginning to turn around their revenue. Of course, there's all sorts of other things going on here too. They've been acquiring, they've been focusing on their domestic market, they've been doing all sorts of things. But again, just some evidence of the link between customer satisfaction and the propensity to buy more from an operator.

I think that really picks up on some of the things we talked about yesterday around being a trusted service provider. You've got to build that trust.

So, just briefly in terms of some potential customer benefits of value-add services. This slide is just highlighting some of the complexity around a multi-cloud solution, suggesting that service providers could bring real benefit by managing some of the complexity of that on behalf of their enterprises. So, there's all sorts of issues that enterprises face around trying to link up legacy and cloud services, dealing with security, dealing with regulatory compliance, different issues in different jurisdictions. I think service providers, other vendors, can have a real key role in bringing that complexity, managing it, and actually we spoke yesterday about the move towards the service provider model being a very attractive one to enterprises, and I think that's something that operators can potentially play a role in.

Around this, professional services as well. I really would highlight professional services as a key enabler for moving enterprises on. From an operator perspective, if you've got that capability, that enables you to be much more proactive about looking at your current customers and thinking, well, how can I improve things for now? How can I change their contract now before they come to the end, before they're looking elsewhere to do business? We've seen a lot of aspiration from operators around professional services. Very few of them are doing it very well, but there is a sense of actually, we do need to be in this space a little bit more, and again, some of the acquisitions we've seen a little bit recently will help to build up their professional services capabilities.

So, finally, just to introduce a few other general areas in which there may be benefits for enterprises and value-add services, I think we can talk with the panel a little bit more about where they see the benefits for enterprises in terms of taking on some new services. There's a lot of options out there in the market, and it's very difficult for an enterprise to select which is the best for me, and I think we could be doing more as an industry to try to identify, actually, these are the benefits, and cutting through some of the complexity to help them understand the impact on their business of some of these new digital services.

Round Table Discussion

Catherine Hammond

Okay, let's turn to the panel, then. Thank you for joining me. I mentioned, we talked about trusted service providers a little bit over the last day. Atchison, would you say there's a benefit to an enterprise in procuring multiple networking value-add services from a single trusted service provider, and how can a service provider gain that trust?

Atchison Frazer

Well, I mean, that is our business model [unclear], so we do strongly believe in that. If you think about it, the complexity slide that you showed there, there just aren't enough people and enough resources, enough expertise, to manually manage that kind of complexity. It's not uncommon for an operator to have under their management thousands of remote locations, so it's even more complex when you add that, and then you add the cloud aspect to that as well.

So, you know, our view is that eventually - it's sort of a term called build, operate, and transfer. We spend a lot of time building out the architecture that has taken out a lot of the complexity, and making it really work to the point where the operator can take it over. Typically, the licensing schema is over a three-year period, so what they expect to do is continue to add services in years two and three, and then at that point they start to make up some of the lost margin. Professional services probably come into the mix in year two or year three as well, particularly around security because of the amount of threat intelligence that you're able to extract from the network.

Catherine Hammond

Thank you. From your point of view, Philip, is it helpful for there to be a single face to the enterprise? Or, you come along and sell your solution independently of the operators?

Philip Griffiths

I think it does help to have a single entity. Customers obviously want simplicity. They want their solution just to work. They don't want to have to go through the manual process of building it out themselves. So, in any way that the network operators can make it easier for their customers to connect their applications in order to enable what they want to do, whether it's running their applications, makes it much easier for them.

We're at the point where, for example, we're working with one of the public clouds and a major workload provider to do migrations from on-premise into the public cloud with network as a service, which you can just spin up instantly. They're obviously doing that because they're not able to get it today from their network operator, who needs to do manual work underneath in order to facilitate that, and in any way that the network operators can make it easier for their customers to become digital, to be more effective with their applications, to extract their business benefits from it, will ultimately benefit them and their customers, and that's a trusted relationship.

Catherine Hammond

Okay, and do you agree that customer satisfaction is a key issue for selling value-add? Should operators be doing more? Can you guys be doing more to help operators in that?

Atchison Frazer

Yeah, in the case of Versa, we actually have some pretty good data on this. Over time, the volume of trouble tickets, for example, in those branch - imagine, your application that you depend on doesn't load properly, or it's degraded for whatever reason. It's typical to blame the network or some other factor but having an operator that has the visibility to - you know, every single incident in every single branch through one central management plan, which is what we deliver to the operator, I think is a pretty big advantage.

But we've seen that our end-user customers over time, their trouble tickets decrease by deploying our technology. So, I don't know that Verizon, for example, tracks their NPS, but I think 23's pretty good for a service provider. If you look at the cellular side, they're usually minus something or other. So, I think that's a very positive trend.

Catherine Hammond

Yeah, I mean, Verizon have been doing some work around this, I know. We spoke to them earlier in the year, and one of the things they've been doing, they've introduced an integrated tool around sales and quote-contract process, and they've reported that they've reduced their cycle time by 50% by doing this, which is a key gain in terms of customer satisfaction. Because I don't think it's just about once you've installed your system. That's great. There's also just the build-up, and the whole procurement and implementation process.

Philip Griffiths

That, to me, is the critical part. The function of the net promoter score is not to have a high net promoter score. It's to become a trusted advisor to the organisation so that, instead of them going through a procurement process where they issue RFIs and RFPs, and whittle down a list, instead they come to you and say, we're developing this new capability. We really trust you, based upon what you did for us last time, what we've been doing for the last five years. Can you do it for us? That then gets you to a unique position where, as the network operator, you can provide those value-added services much more effectively to your end client.

Catherine Hammond

Okay, thank you. I mentioned professional services as well as a key enabler, I think, I supporting enterprises moving into - migrating from their legacy solutions to their new solutions. Should - do you think service providers should be offering those professional services themselves?

Philip Griffiths

I think they have to ensure that the services are provided to their end customer, and that may be them having the capabilities in-house, where they help the client to make sure their solution works, and not just make sure their solution works, but the organisation actually gets business benefits from them, which is what - the customers don't care about the migration. They care about getting the benefits from the application, being in the new environment. If they're not going to offer those services themselves because they don't want to become a systems integrator, then they need to have strong strategic partnerships so that they have a go-to party that provides that for them, so that the customer gets the value for their business from the IT and the network.

Catherine Hammond

Do you agree with that?

Greg Ferro, Packet Pushers

Hi. Greg Ferro from Packet Pushers. I love this data, because basically what you've spelled out is how telcos are - customers hate them, and they don't want anything to do with them.

Catherine Hammond

You come from the land of Macquarie Telecom, don't you? They are the un-telco. They have the best NPS of a telco I've ever seen.

Greg Ferro

I've had personal experience with DT, Vodafone, BT, Verizon, AT&T, I've worked on global WANs, whatever, and they're all hopeless. The fact is that the telcos are actually turning to SD-WAN companies for some inspiration as to how they can turn around their businesses, because that's what I'm seeing. The enterprises can't wait to get away from telcos and move onto the internet and walk away from private MPLS services. So, the question is, can SD-WAN over the internet just replace the misery that is a telco for your average enterprise IT team?

Philip Griffiths

It's an interesting question, because that's why we exist, to provide application connectivity over the public internet without the MPLS, but if I look at telcos at the same time, you're right. They have spent too long being in this unique position of owning a market, of having something that someone needs and therefore not having to provide the best customer service, and fundamentally, if they want to continue to be relevant and not just be a utility with a low return on investment, they need to completely pivot their business towards looking at what the customer wants and investing much more on innovation.

Telcos have - they're really, as you say, fallen behind, because they've missed waves. They missed the public cloud one as well. They could have had a relevant story there. Maybe they couldn't have been AWS or Azure, but...

Greg Ferro

They've messed it up. They believe they missed the thing called the content delivery network. They thought if they put datacentres on their backbones they would win. The answer is, content delivery networks mean they - and then they had to sell them all off at a massive loss, right? Quite honestly, no one trusted them.

The second thing - so, a follow-on question to that is, if you posit that SD-WAN can give telcos a way out of becoming utilities, looking like electricity companies - but if you posit that they can add services such as firewalls and security via these things, are they actually competent to do this? I don't think they can deliver it.

Philip Griffiths

You can build capability in many ways. If you decide your strategic position as a telco is to pivot into being a systems integrator alongside having your networks to provide these value-added services, then there's multiple ways you can go. You could acquire a local systems integrator. You could incubate an internal start-up in order to build capabilities outside the super tanker of the adult organisation in order to create those in-house capabilities. Fundamentally, they have to make a decision of where they strategically want to go, and then to start changing their culture, because I think it's a question of culture, ultimately. That filters down into the strategy that they have, and how they tactically engage. If they do want to go in this direction of providing those value-added services, being a trusted partner for their customers, then they have to radically change their organisations.

Catherine Hammond

So, Atchison - Atchison has the perspective of selling through telcos.

Atchison Frazer

I agree with everything you said. Couldn't have said it better. Philip is spot on.

Male 1

Just on the trust issue, nobody over the age of 25 is ever going to trust a traditional telco. I mean, if I don't have to buy something from Vodafone, which renamed to Proximus,

I won't buy it. They forced it down our throats as monopolies, and now duopolies in certain regions...

Philip Griffiths

That's the beauty of time, though, where generations take over from one another. So, of course, they're not going to pivot tomorrow, but they could have a long-term future if they change their organisation, and if they can keep themselves operating. I'm not here to defend telcos, but they could. It's a very long journey.

Greg Ferro

There are certainly some teams who will outsource something to a telco and go, not my problem, and just happily run away from it, and let the telco pick that up, right?

The question here is, what I see in the SD-WAN market is, it's going two ways. A lot of companies are taking SD-WAN and bringing their WAN back in-house. So, they're taking it back off the telco, back off the outsourcing partner, and using SD-WAN to just pave over an internet [type of] profile. Now, that's got challenges, but for a lot of companies that works. So, for example, GAP in the US is deploying 3,500 sites, and they're doing it themselves. They're not getting a telco. They want nothing to do with telcos. They want to kick them to the curb, and they just treat them - they actually have a - they're building a platform now to do open bidding on bandwidth. So, the telcos actually have to come in and bid, store by store, to get bandwidth.

Atchison Frazer

The only thing is, though, think about SD-WAN, the telco doesn't actually have to - the telco doesn't actually have to do anything. All they have to do is sell the licence, right? They don't actually touch - they don't actually touch anything. It's failproof.

[Over speaking]

Atchison Frazer

The software does the work. The telco doesn't actually have to do anything.

Philip Griffiths

That's the problem, in my opinion. You need to move away from this model of, we sell product, we throw it over the fence. If they use the tools of SD-WAN and applications through networking and whatever the acronym is in order to continue to sell a product or a licence and throw it over the fence, they will continue to be irrelevant. If they change that approach into, actually, we need to be a trusted advisor. We're actually going to change our organisation and our culture and have sales people that can actually talk to my clients about the application needs and their security needs, and not just understand a core network, then they have the capability of being relevant. But it's not going to happen across the whole market.

Catherine Hammond

Maybe we can move on to think about the benefits to enterprises of some of these value-add services. Which do you think of those benefits to enterprises there that your services

and other value-add services can bring? Which ones are resonating most with enterprises? Is it about price reduction and better cost control, or is it about more around the business benefits that new services can bring?

Atchison Frazer

In our case, it's more about the intelligence, and the monitoring, and the analytics that is derived from the services. So, if you really want to be a trusted advisor, you have to have better intelligence and better analysis of actually what's going on in every single location that you have. So, that's - I think that's where the telco or the operator has the opportunity to be the trusted advisor, provide professional services wrapped around that intelligence. In the case of Verizon, they are one of the leading managed security service providers - MSSP. They have a very robust threat intelligence report, annual report, that they did. I just posted three blogs about it, it was fantastic.

So, to be able to deliver that kind of intelligence and prove that the services are actually increasing your resiliency, they're reducing your attacks, they're increasing your bandwidth at less cost, all of those data-points are derived from SD-WAN as a service.

Philip Griffiths

For me, it abstracts a layer above that. You know, we can pretend all day long that we in the network space are relevant, but at the end of the day the CEO doesn't care about the network. He cares about the business, and by looking at these five things, really, it's about saying how do I connect to my applications, and how do enable my business to innovate, how to get quicker time to markets, and how to - what was the third - have productivity gains?

Those are the core things that a business really cares about, and if we can help them to achieve those things, it's always good to reduce costs, and to reduce risks, but if you're trying to win business on reducing costs and reducing risk, then effectively you're in sales mode A where you're just getting the RFP and you're responding to it, and then you're always competing and having to fight for market share, whereas if you're focusing on those other ones and where that business value is, then you're able to become that trusted advisor in sales mode B, where you can build that long-term relationship.

Catherine Hammond

Do you think operators are doing enough to communicate the benefits to businesses and communicate them in the right way?

Philip Griffiths

No. I think we all have a challenge in the market in that, because again, you need to abstract it to a higher level of actually, how does this benefit the business? How does this enable them in their unique vertical in what they're doing to do what it is? It's very easy to say, well, we benchmark 50% to 70% against MPLS cost as less, and then the customer turns around and goes, well, we just use VPNs. That information, that benefit, is of no use to them. You have to understand what's their unique position, what

architecture they have, how our technologies can enable business benefits for them and not just technology benefits.

Atchison Frazer

Again, I would make the point that the analytics are really key. So, in our case, literally, you just have to open a dashboard and extract the data that's relevant, and if you can show before you were spending \$10 million on your WAN kit, and post SD-WAN it was \$3 million, that money can be ploughed back into innovation, as an example. Moving from a cost centre to actually being accretive to the business would be a huge win for our hero, which is typically the network admin.

Catherine Hammond

Atchison, you sell through service providers, so in a sense you supply the service providers. So, is there anything that you can do to assist the operators in communicating those benefits? Are you doing that sort of thing already?

Atchison Frazer

Well, again, in our case everything's automated through software. So, there's - literally, any piece of information that you could possibly want that you never had before with the legacy architecture, the MPLS, you can derive from our analytics layer and our software architecture. To Greg's point, we - you can't - there are certain immutable laws of IT, you know, business development you can't repeal no matter where we are in the cloud era, one of which is you still need people, and there aren't a lot of domain experts yet on how SD-WAN actually works. So, we actually - part of our relationship is, we have resident engineers in Basking Ridge. My team, my marketing team, has done probably 25 roadshows with Verizon and their customer base.

So, you still have to do the old-school stuff, but once you turn it up and you get - you know, you start to get - the optimisation effect comes into play - then it becomes a lot more streamlined.

Catherine Hammond

I spoke earlier about some of the different value-add services in terms of the application space, operators typically offering quite generic applications. Do you think that in general, value-add services should be sold as a - here's a generic service that you can apply to your business in different ways? Or, is there a case for focusing on specific vertical segments, for example?

Philip Griffiths

I think it depends on where, or how much you're going to invest into it. Because it's very easy to say, okay, we're going to support Office 365. You just need some people, you can chase business, it's - everyone has Office 365. But you would be - there's a much larger market to support customer applications and how they actually use it. So, maybe a financial company uses Office 365 completely differently to a healthcare company. Moving away to other applications, they have specific needs, and if you actually want to be relevant in the space and to help customers to achieve their business

objectives, then it really comes down to understanding the vertical that they work in, the specific application instances that they use.

It's very easy to say, we can deliver application support. We can deliver cloud. It's much more difficult to actually do it in specific areas with the challenges that customers have.

I had a recent example where we were working on engagement and a customer - or a partner - said, yeah, we can do IoT, and we said, okay, well, how do you do the CAN bus, how do you simulate this and that? They went, well, we don't know, like that. Then you don't do IoT, because you don't understand the industrial side of it. That is the outcome of companies trying to do value-added services, but not really actually investing into it. If you want to be successful, you have to want to deliver it and to invest into the specifics.

Atchison Frazer

Yeah, I would just echo what Philip is saying. Vertical markets typically have different kinds of business-critical applications, so that's typically the top question that you want to ask is, what kind of application are you trying to optimise for which purpose, in which - some of the branches might be different. You take financial services, for example. It could be corporate IT, but it could be the customer-facing network. I think I used the example yesterday, the ATM network where you actually extract cash should be segmented from all other traffic. So, that's something that the flexibility that our software offers the operator to deliver to the enterprise, but the other notion is transit. You know?

So, in our case, you can set up a policy and say, you know, I want to have a premium QOS fast lane just for my Office 365, and I want a dedicated conduit that just delivers that traffic and it's never congested by the other kind of traffic. So, focusing on the application, the end-user, that actually is the business user, is the folks that are actually having to use those applications.

Catherine Hammond

Thank you. Jeremy, did you have a question?

Jeremy Cowan, IoT Now & VanillaPlus

Catherine, you mentioned earlier that you thought the managed service provider solutions, that very few were doing it well. You've alluded to KPN. Who else is doing it well?

Catherine Hammond

Who else is doing it well? They're trying to do it. KPN are doing well in terms of, they've taken a decision to focus on their domestic markets. They've pulled out, a little bit, of Germany and Belgium, and they've made, I think, about seven acquisitions over the last year or two around IT, so to build up particularly professional service capabilities. There are others who are trying to do it well. Telstra's one example where they - back here, they're the ones that have, for their domestic cloud service anyway, really strong revenue growth, and they put that down partly to professional services. Again, they've been acquiring to get that.

There is a lot of potential out there. When I spoke to Rackspace earlier in the year, they're good on professional services. They're turning that into a revenue-generating stream. They've always offered that alongside the managed hosting as part of a package, and they're now deriving direct revenue from that and seeing really strong growth in there.

So, I think there's a lot of opportunities for operators to do this. What I'm hearing at the moment is more around aspiration and thinking, well yes, we need to do this in order to be given bid opportunities to get in on the RFPs, or to migrate our existing customers, but I think there's still a lot of uncertainty about how best to go about that.

I don't know, from your perspective, Philip and Atchison, whether you've come across operators who are doing better? You mentioned Verizon as someone you worked with a lot.

Atchison Frazer

Again, I don't know that they track NPS. I mean, the IT industry generally, it's very, very - I think Apple is 60, 65, which would be way off the charts, so we - it's - the IT industry generally is not very - considered very good at customer service. But again, focusing on the things that cause heartburn, the things that - if you think about it, you know, you've been providing circuits, all this - that's very transactional, and if the circuit's down, if you have a brownout or your New York office is down for three days, naturally you're going to develop a bad reputation. That's been happening for years.

Now, they can kind of turn the table with SD-WAN. You can offer - I mean, value-added services, there's nothing more value-add than security as a service and having the data behind it to prove that you actually are improving that security posture.

Philip Griffiths

Greg would argue with that.

Greg Ferro

Yeah, I actually think that the idea that a telco can produce a security policy and sustain that month-over-month as a service is laughable. How are they going to be able to manage firewalls? Every customer has to have its own policy, its own rules. There's...

Atchison Frazer

We automate them.

Greg Ferro

As we move down the machine learning path...

Atchison Frazer

We automate that in SD-WAN.

Greg Ferro

You can only automate part of it. You still can't intuit that, I need Oracle apps to run like this, or I need my Office 365 to do that, or I need - right? If you take - as soon as

you take the people out of the company, the telco has to start creating that policy, and they have to then put people on site. Yet, the market is also pushing telcos to reduce headcount because they've got more headcount than they had. Their average revenue per employees is absolutely abysmal, right?

So, on the one hand you're saying, I've got - I can use automation. Yes, I agree, but what you're also doing is creating a need for trained professionals, of which we have none. We do not have enough globally. We have this barely-competent training program that produces people who, after eight weeks of training, we call them professionals, and basically, they're qualified to walk without falling over in terms of networking skills. I find it laughable that telcos will ever do this. It's never going to be an industrial-scale capability. It's always going to be small-scale, highly-personalised. Enterprises will have to own this function. It will never be - now, they may use a platform provided by somebody else, AWS or whatever, but they'll always end up DevOpsing, or...

Atchison Frazer

I think there's some trending data contrarian to what you're saying, but Gartner has a really good perspective on this. We're actually referenced as an empowering technology for firewalls and service provided by operators. So, I can share that with you. It's a rather detailed analysis of where that market's heading.

Philip Griffiths

On the other hand, we say abstract above that and embed the network into the application, so that - in fact, one of the taglines we have is, unshackle yourself from telcos, because you can just connect with anything and using ubiquitous public internet. I think the - going in this direction, systems integrators have been selling these sorts of value-added services around applications for years. These are essentially commodity value-added services. If you move to focusing on connecting the application rather than the underlay network, which is potentially a big gamble, potentially, if you have a huge core network, then you're able to start moving into areas of, well, as we're delivering your network as part of the DevOps paradigm, then now we add value-added services around DevOps and start moving into these new, more innovative areas with our clients.

But that takes - as you say, it's a big strategy change, and maybe they need to incubate companies external to the organisation which can make decisions which potentially cannibalise the other parts of their business.

Catherine Hammond

It's an interesting point you make, Greg, about the headcounts with telcos. Yes, telcos are trying to desperately reduce headcounts, but if you look at all the acquisitions they're making in the IT space, I'd argue actually it's about getting people in, and a lot of the value of the companies they're buying is about buying in the people. For me, one of the key success factors for those acquisitions is, can they hold on to those people? Can they, when they're buying a 200-employee business, hold on to those people, make them comfortable working in a telco environment? Maybe that's about - similar to how Philip said - having it as - not a part of the whole company but run as a separate standalone business.

But I think people are an interesting challenge with telcos.

Philip Griffiths

I actually - I fully agree with that. I think you have to do it, unless you completely change the culture of your organisation. In an IT organisation that I've seen, they once acquired a business in a country, a consulting business, and I worked with a few people there and four years later, they all left the organisation because they hated the culture, and the rules and the processes that were imposed on them. So, they all left, and they had that complete brain drain. So, all they got was the clients that they'd previously come with, which they maybe no longer have. If you're going to make that change, then you have to start potentially building these separate organisations with a separate culture where you - at some point, you might pivot the whole company and make those changes but allows you to have a different operating environment.

Catherine Hammond

So, I mean, if you had to advise telcos as to where they should invest their money in order to benefit from value-added services, what advice would you give to them?

Philip Griffiths

I think, if we had a crystal ball, we would be very wealthy in a few years. But it has to be in the area of making the services they provide to their clients and the value they provide as seamless as possible for them to get more value from their IT, and that sounds very broad and prosaic, but it turns into tactical conversations around, as you say, retraining their workforce to actually understand their end-users' requirements, and needs, and architecture, and not just the network. It means investing in creating the software overlay on their business so that they can deliver a more AWS or Azure experience where they can just click and deploy, rather than having to wait for four months for a truck to turn up and do things. It means looking more at the vertical areas of their actual end applications and what they're trying to achieve, rather than just delivering a product and throwing it over the fence.

Catherine Hammond

Okay.

Atchison Frazer

I would agree with Philip. The enterprise innovation aspect, in the case of Verizon they actually have, I think, six innovation centres worldwide. I mean, I was actually in Basking Ridge earlier this week, in a boardroom, whiteboarding a potential solution that we could actually create in one of these innovation labs. Telefonica has innovation lab in Silicon Valley. So, I think he's onto something. If they can think more like the innovative technology companies that they serve and actually start investing in things that are going to help them create a new dynamic with the enterprise, I think - that's where they should be investing.

Catherine Hammond

Yeah, I mean, I think - as you say - they don't need to be at the cutting edge of the latest, greatest technology. What they need to be able to do is to deliver to enterprises something that works, something that's reasonably up there, and yes, like we talked about security yesterday, how much security do you need to do? You need to do enough. How much innovation do you need to have? Well, enough to satisfy the needs of most enterprises.

Philip Griffiths

Well, that's the thing. It's - there's many strategic discussions we can have of interesting areas to go, but it fundamentally starts with the basics. If they can't deliver their core competencies, then there's something wrong. Focus on that while also developing the future capability to grow revenue in new areas, but make sure you've always got the basics right first.

Catherine Hammond

Yeah. Any other questions before we finish? Okay. Well, thank you very much, Philip and Atchison.

Philip Griffiths

Thank you very much, everyone.

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