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VZ - Verizon Communications Inc at Oppenheimer Technology, Internet & Communications Conference

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## CORPORATE PARTICIPANTS

**Ronan Dunne** *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

## CONFERENCE CALL PARTICIPANTS

**Erica Moffett** *Oppenheimer & Co. Inc., Research Division - MD and Associate Director of Research*

**Timothy Horan** *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

## PRESENTATION

**Erica Moffett** - *Oppenheimer & Co. Inc., Research Division - MD and Associate Director of Research*

Annual Technology, Internet & Communications Conference. As many of you know, I am Erica Moffett, the Associate Director of Equity Research and the Head of Corporate Access here at Oppenheimer, so I really appreciate all of you coming here. And on behalf of all of the Oppenheimer team, we want to extend a thank you for your participation at this conference. I hope everybody had a productive day yesterday, and we have another very full day lined up for you today. And right now, we are going to kick it off with Tim Horan and with Ronan Dunne from Verizon.

So with that, I am just going to turn the floor over to them and get started.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

Thanks, Erica, and thanks a lot for coming, Ronan. And I think before we get started, we have a safe harbor statement. Everyone got it?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

All right, speed reading, we're done.

## QUESTIONS AND ANSWERS

**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

So Ronan, thanks a lot. We have a full wireless morning here this morning. How long have you been at Verizon Wireless now?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

So I joined in September. So coming up to a year at this stage.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

Good, good, good. And you had a very successful wireless career in London before this. Can you talk a little bit about what you did at O2?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes, sure. So for those who don't know, background is I'm a finance guy, an accountant by profession, used to work in banking when that was a socially acceptable thing to do. And then I spent 15 years basically in the industry in the U.K., with the last 8 years before I joined Verizon as the



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CEO of a business called O2, which was part of the Telefonica Group. And it was a business that earned a reputation as being probably the strongest-branded carrier within the wireless marketplace in Europe with a very strong orientation towards customer experience, loyalty, differentiation through service experience as well as through network experience.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

Great. I definitely want to hit on that. Can you -- just because of your background, can you talk a little bit about your impressions of the U.S. wireless industry versus what you saw in Europe?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes. So it's interesting. One of the characteristics that's distinctly different is that most of the European carriers, wireless is fundamentally a personal consumption. I think everybody pretty much recognizes that. But the structure of the marketplace in the U.S. is that a significant proportion of business is sold in family plans, in multiline plans. Whereas in Europe, almost exclusively, it's single line. So that's an interesting one. So that creates some interesting opportunities around how we deal with family groups, how you make sure that within a family plan you can differentiate the offerings between different parts. So that's probably the single biggest difference. I mean, back in the day, whether it was calling party pays or receiving party pays, used to be a big thing. In a world of unlimited voice, that's not really a factor. And I think the other thing is that a lot of the European markets were established with an incumbent wireline telco who then became the incumbent wireless telco. Whereas the evolution of the marketplace has been different in the U.S. And businesses like Verizon, the consolidation of the regional players into a pure wireless play. So the kind of the background and the structure of the market, a little bit different to where we've got to today.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

And how's the competitive intensity of Europe versus the U.S.?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

So that's interesting. One of the things I would characterize, and we've seen a little bit of a change in that in the U.S. probably in the last 3 quarters is, I would say, that certainly in my market in the U.K., more proposition differentiation than heavy promotional overlay. So a lot more of the value in the individual propositions and segmentation. And I think what we've seen in the U.S., particularly in the last couple of quarters, is a move in that direction. Probably in truth occasioned by the fact that we returned to the unlimited marketplace in the first quarter, which meant that there was a little more comparability between the core offerings than perhaps had been last year.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

So O2 was able to gain substantial share and you expanded margins, was a great success story. What have you learned from that experience for what you can do for Verizon? Or I guess maybe said another way, what's your strategy for running Verizon Wireless?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes, look, great question. Look, I'm very excited about the industry overall. And that's kind of where I would start. Demand for our product is -- continues to grow substantially. And if you look across the industry sectors, an awful lot of them are looking to try and generate demand. We have a really, really high quality problem is, we have tons of demand. Now we're just looking at the way to optimize the monetization of that. So that's kind of the first thing I would say. The second thing I would say is, I think there's a real opportunity, therefore, to enhance the differentiation. So more specific segmentation of proposition, more personalization within base management. And if I take the experience from the U.K. specifically and Europe generally is I think Verizon is incredibly well-placed with the preeminent network, not just in the U.S., but I'll tell you, globally, the



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reference carrier globally in the wireless industry is Verizon in every marketplace you go. I was talking to the strategy chair of the GSMA the other day making that point. So we have an amazing infrastructure to build on and therefore, the opportunity to really build out the brand resonance in a way that allows us to serve more of the segments in B2B and in B2C, I think gives us a really exciting opportunity within a sector, which I think has really exciting growth opportunity.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

And while you mentioned it, it's interesting, I always thought of Verizon as an engineering organization going way back to Bell Atlantic. And they very much are very proud of their engineering and rightly so. But when you look at the network, what about the network enables them to be the best globally?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes, look, when I look at the opportunity, and don't misunderstand me. I think right at our core, having an incredible strength in engineering is an essential ingredient. And therefore, our proposition and our strategy is undoubtedly built on continuing to deliver a superior connectivity experience. But if I look at the consumer sector, people don't really buy technology. They buy the possibilities that technology enables. They buy the experiences. They buy the connectedness that allows them to do the way they live their lives. So what we really want to do is use that superior connectivity, that reliability. From an access reliability, capacity, coverage, we are preeminent in the marketplace. And when you then build experiences on top of that, people can rely on it. So the beauty of it is, we have the engineering base. Now I think we have the opportunity to build out the experience suite on top of that. And a small example the other day was we've relaunched our loyalty program, something that had been very, very successful for me in the U.K. So we've done a major relaunch of our loyalty program, which will give our customers real value for their loyalty.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

And can you describe that loyalty program?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes, sure. So we launched Verizon Up at the beginning of the month. And it has multiple tiers. So just for participating, there's an opportunity to get access to benefits and offers. Then there's -- as you accrue credits in the scheme, there's a next layer of value that you can attract. And then as you go up the pyramid, there's the money-can't-buy opportunities, there's the access to sold-out tickets, there's the experiences at events and really leveraging a lot of our sponsorship assets, whether it be NFL, NBA, music and other things. So a real opportunity right across the country on a very segmented basis to make offers that are of value to our customers available to them and really recognize them for their continued loyalty. What we're also trying to do is make sure that we personalize those offers. So for example, one of the launch offers is 3 months free HBO for customers who don't have HBO. But we'll actually look and if somebody has an HBO app on their phone, I'm not going to offer them up 3 months free HBO because it's of no value to them. So I'll make sure that the offers carousel for them is pertinent to their needs rather than, oh, I have that, I have that. So we also have the opportunity to personalize and tailor the proposition over time to give our customers more choice for the things that they value. So it's quite an exciting thing because what it really ties up is this idea of essentially a carrier, if it does it right, is an information company and can be a partner to their customer in a way that adds more value because of how we know them and then how we stand that information up for the customers' benefit. So they get more than connectivity. They get access, relevant access to offers, but also to services that are important to them. So we're really just scratching the surface.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

Interesting. And do you have to shift Verizon's brand somewhat? Are you going to come up with flanker brands? Like what would you like the main message of the Verizon brand to be?



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**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Yes, I think if you contrast us to our competitors in the marketplace, it's fair to say that by acquisition all of the other name brands have adopted another brand within the market. And certainly in my experience in Europe, both through partnering in the MVNO space and through introduction of sub-brands, we're able to expand our relevance in the market. We clearly have a very strong reseller business and relationship with TracFone, which allows us to address very effectively certain segments of the market. But I think what you'll see is, whether it be inside the core brand or out with, what you will see with us is broaden out our offering, create more choice, expand the range of segmented offers that are available. And I would say that as a generic. How we actually execute that in the market, you'll see more of over time. But it won't be a -- we do it in one place or another. You'll see it more broadly across our portfolio. Because when we launched unlimited, we were very clear and said one single proposition was the start of the conversation, not the end of it. So I think with the network tools we have and the brand attributes we have, we can start to broaden out our proposition quite significantly.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

So you're talking about a pretty big sea change in how to think about the company, going from a wireless connectivity company to a company where you're improving someone's lives and making it simpler and basically really surprising them on what you can do. Can you give some examples on O2 what you did and maybe just some other high-level thoughts on what you're going to do now? And do you have the capabilities? I mean, are you working on AI to do stuff like this?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

So I think the first thing to say is, this isn't just a B2C proposition. Actually, in many respects, B2B is an even more interesting one, where allowing our business customers to get closer to their end customers. So in the IoT space, in the telematics space, already starting to use both big and small data to give our customers better opportunities to manage their businesses more effectively. Inside our own business, we see machine learning, AI, natural language programming as being significant opportunities for us to do a double whammy. One is improve the experience we give to the customer and at the same time reduce the cost to serve. In the other area that I know it's one that you spend a lot of time thinking about is network capabilities these days are a sea change different from what they were even 5 years ago. The ability to segment experiences inside the network. The ability to stand up a private network for an enterprise client. The ability to move the demand cycle in the network. One of the experiences that we've seen since we've launched our unlimited, we're attracting a different mix of customers and we're seeing the profile of usage on the network change significantly. So from a pure yield management point of view, we're selling more of the capacity that we create on the shoulders and off-peak than we were previously. So when you put all those pieces together, what you will see is there's an opportunity for more segmented value, which is segmentation of the network's capabilities and features. And then segmentation of the go-to-market, whether that be the distribution channels or the serve channels. So it might be pure digital only. I had one business in the U.K. which had no call centers, completely online self-serve. And actually, the community of members solved 90% of each other's questions without them ever having to be referenced back to the carrier.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

And was that another separate brand?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Yes, it was. So in the U.K. it was a brand called giffgaff. And what we saw in Europe, and I think is evolving here in the U.S. is, that the market of what I would describe as a hybrid market. So traditionally, and this is my observation, is the prepay in the U.S. market has been seen as a lesser value opportunity. In Europe, generally, prepay is a way to pay and sort of the value equation. It's less about credit impaired and it's more about choice and control. So I think there's an opportunity for us to use prepay more as a payment choice rather than a kind of a segmentation by default. And in that, there's this hybrid market of people who want to have the flexibility of how they pay, want to have the flexibility of a monthly plan rather



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than longer. But essentially, they're not what you would call traditional prepay. So that was where and some -- a number of the newer brands have gone into the marketplace and created a more personalized, very often digitally-oriented, millennial-oriented proposition. And that's where network segmentation and service segmentation can really mean you can serve that market more efficiently.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

And obviously, I don't know the numbers. I'll just make it up. But it sounds like maybe the prices were 10%, 20% lower, but your costs might have been 20%, 30% lower.

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes. And that's really where -- what I would describe as your airtime margins or your kind of gross return after you've taken your very direct cost to either acquire and basic service. And so you could actually serve those customers at a margin that equated to your overall business even though you may be selling at a slight discount to your regular premium price.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

And it sounds like that form of service, the churn is much lower than a traditional prepaid?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes, it is. Well, again, in Europe, and certainly my experience in the U.K. You have an industry here that's maybe a 5% to 6% a month prepay churn, think 2%, 2.5%. So the sort of opportunity there is significant as well.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

You touched on it that the networks are evolving dramatically. We're going to start to see a lot lower latency, obviously, a lot more capacity. I think you can get better location-based services with how the networks are evolving. How do you kind of charge -- how do you start to think about differentiating how you price your services and how you charge?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

So I think the first thing to say is, if you look at our core business at the moment, and people think about, okay, in the near term, what are the catalysts for service revenue growth? The first thing to say is that for our customers who are coming onto the network now or for customers who are migrating in, after the early kind of optimization when we first launched unlimited, actually, we are monetizing the move to unlimited. So it's actually enhancing our yield and it's accretive. So we're seeing a lot more customers stepping up. So we think that the opportunity within an overall portfolio of assets is there's still significant step-up opportunity just for access to more data. Then I think in our case, we have very, very strong position in our core traditional segments where we have the highest value customers in the market. But as we start to segment our offer, segment the network capabilities, I think that we can address the underserved markets. And there are some segments where we have significantly below our natural share. So inside those, and I'll give you a good example. Three or 4 weeks before we launched unlimited, we launched a 5-gig, \$55 plan. And some people at the time were confused as to, why are you saying 5 gigs might be all you need and then 3 weeks later you, unlimited. 20% of my gross adds are coming on the 5-gig, \$55 plan. So I think the danger is that people think it's a one-size-fits-all. What I'm really saying is, we're going exactly the opposite direction. Of course, the noise is around unlimited, but the opportunity to develop a portfolio which still has monetization within access and then on top of that add to the monetization opportunity by this idea of get them to account formation and then grow them. So in an unlimited world, what we see is the propensity of people to add an additional connection, whether that be a smart device, whether that be a tablet is significantly higher. And that allows us to generate line access. The fee is \$20 a month. So we're seeing inside accounts that we're



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continuing to grow inside the account in an unlimited world. So actually, when you get to unlimited the perception is you have no more yield in there. What we're actually seeing is continued adoption of additional lines inside those accounts, which is driving yield. And then I think the third piece is that as we add in more value-added services, so whether that be cloud services, whether that be hum, our auto product; whether it being the small and medium business, things like our One Talk service. So you will see more product and features that will come and sit on top of the core proposition. So really, account formation, then growth within the account. And the one thing that I think we're recognized at being very strong at is and we will get even better is on our personalization in our base so that our record low churn is something that we will continue to focus on. In the second quarter, we got to 0.7% churn, which is the eighth quarter that we've been below 0.9%. And while in the third quarter because of the nature of new device launches and other things, we'll naturally see a tick up in that. I think we see an opportunity to continue to focus on below 0.9% churn. So those 3 will help us to drive in the short, medium term our revenues.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

So do you think we're on the verge where, well, 2 things, I guess. Can the industry growth reaccelerate here as we move to unlimited now? People are kind of moving up the bucket plans and adding more devices, more IoT. And can you start to gain share in the market? I think you guys have lost a little bit of share the last couple of years. And is that your goal at this point?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes, I mean, it will be very targeted. So is it just blanket going after? No. I think what you'll find is it'll be very focused, very forensic approach to the segments in which we're underserved and making sure that our proposition is what adds value rather than simply looking at promotional activity to drive volume. So I'm much more interested in sustainable units of revenue rather than simply a debate about a specific gross add or net add number. And I think we have a real opportunity. We have significant segments that are underpenetrated where we could see ourselves picking up a number of points of share within those segments with more targeted offerings. And then as we move through to a 4G going into 5G world is, then I think the opportunity of new services, whether those that are driven by really low latency or the fact of being able to segment the network even more so that we can allocate traffic and services in a way that really redimensions the capacity that's in the network. I think that will drive a lot more new opportunity. And that's where some of the IoT initiatives that are out there today are only just scratching the surface. But to give you one very practical example in business, the quality of our 4G network means that we can offer redundancy to people for their wireline services. So across our B2B, having a 4G router is actually a very attractive piece of business for us because of the strength and performance of our network. So we're actually driving a lot of incremental revenue in our B2B business, but where 4G can be a very effective fallback to the wireline network.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

Are you integrating that with SD-WAN?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes. So look, a lot of the -- where the technologies are going, the kind of interplay of the WiFi and wireless world is the opportunity to create very significant bandwidth for customers. As we look into a 5G world and you think about download speeds and whatever, that's really bandwidth. It's not single applications that are going to need that. It's more a suite of applications that may be either in an enterprise or business environment or in a home environment where some of the experience we've seen with unlimited in some of the semirural and rural areas is, where our wireless service is substituting for high-speed Internet services. So that gives us an instinct that as we build out our 5G capabilities, as we densify the network, enhance the features in the network, the C-RAN and other things, we have more potential deployment opportunities.



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**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

Fascinating. And we touched on it a little bit right before we hit the stage, but can you think about or maybe how do you think about where we are in the whole wireless development of applications and use cases and maybe what might we be surprised at in how we're using the networks in 10 years?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Yes. There's an analogy that I use. And I went to the BBC in London a few years ago and I met the Head of Digital there, who actually was a New Yorker. And he described to me the first 10 years of television as radio in front of a camera. Just think about it. Effectively, a fixed point camera sitting, watching a radio broadcast with a radio mic and individuals sitting at the desk doing the radio broadcast. We're in that moment from a wireless point of view. We've seen wireless as an opportunity to have ubiquitous connectivity. We started to see digital as a way of automating and optimizing what we've always done. So move your analog process to being either more efficient or faster through digitization. Actually, we're right on the cusp of a whole series of new, new opportunities where we can -- they can be game-changing. In the IoT space, we're seeing how in medical tech, the treatment of long-term conditions can be really enhanced with the capabilities of ubiquitous connectivity. You see where agriculture is a really interesting opportunity, optimization of irrigation in California is a good example. But we're right just on the cusp, I think, of a whole lot of new use cases being identified. And we did at Indianapolis 500 this year just the day before the race. We put a driver in a car. We blacked out the car completely, all of the windows. And we set up our 5G wireless network. And we made the driver drive with no visibility other than a head cam, which was streaming from the 5G network. And they were able to run around that circuit at 60 miles an hour with no external visibility, only relying on the relay coming from the 5G network. Because of the virtually 0 latency, they were able to drive exactly as normal. When you see that as an example, when you see the difference between 5G latency and 4G latency is a car traveling at 60 miles an hour responding, the reaction time in 4 inches rather than 4 feet, then you start to get an idea of, wow, there's some amazing capability here. And I think over the next 18, 24, 36 months, you'll start to see more of those use cases coming out. So I think this is a phenomenally exciting time. The 4G LTE Advanced network with carrier aggregation has a ton of more capability to go, but it's a natural segue into the 5G world.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

Great stuff. And back on the network. You're obviously setting up for 5G and carrier -- C-RAN is an important part of that. Where are you in the evolution to C-RAN and in the 5G trials and maybe some of the timing?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Yes. So for those of you who are familiar, we said we would set up trials in 11 markets. We have 8 of those markets set up. And these are pre-commercial trials looking at a 5G fixed wireless deployment. The 5G wireless standards are probably backend of '18, early '19. So we're focused on the fixed wireless opportunity. And what we're looking for in the trials is just what the practical propagation experience is, the experience of self-install. Do you need antenna outside rather than just on the window on the inside, just to see what the actual experience in the wild is. So later in the year, we'll have a lot more insight. So we started with setting up those pre-commercial trials. We're now bringing on friendly customers who are actually using it and trying it out themselves. And certainly, the download speeds are very good. What we need to understand is all of the conditions, the leaves on the trees, your UPS van pulls up that side and blocks line of sight to some of the millimeter wave spectrum. Those are the sort of things that we're looking at. And clearly, with the XO acquisition and then subsequently with Straight Path, we have very strong position in both the 28 and the 39 gigahertz spectrum. But we're also very interested in the unlicensed spectrum of the 3.5-gig. So I think you'll start to see some evolution on the 3.5-gig in the shorter term. And then the end of the year and early next year, we'll start to get real field insight on the 5G fixed wireless experience.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

And so far, has it been playing out as you expected? I mean, obviously, it's experimental.





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**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Yes. I think some of the propagation has probably been better. I think it's the field conditions that will ensure that it's not the, what's the maximum throughputs, but it's what's the minimum throughputs in certain -- experienced in certain conditions, snow, heavy rain, as I said, the leaves on the trees, various other things like that. The line of sight, the ability for people to self-install, find the optimum window and location inside. So a lot of it is very kind of what I would describe as low engineering, tech practicalities rather than the high theoretical. Because at the end of the day, that's what will make this different. If you have to truck roll to install every single home, then it's probably not an exciting enough opportunity. Whereas if it's a very natural self-install, then it gives us a very significant opportunity of leveraging the investment in fiber that we're doing at the moment. The small cell rollout that we're doing already. It really gives us a very natural run into the 5G space.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

Yes, and I've been talking to a few WISPs about this, like going out to see what they actually do. And they generally do put an antenna on the side of the house. And it's like 5x better throughput and quality as a result of that. And it's only like \$100 to install the antenna. It's not that big of a deal. But it does seem like works extremely well if you have the bandwidth obviously and the technologies are getting better and better all the time.

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Yes, it does. And I think like in the early stages, it's really understanding what would need to be true to make this a real alternative to some of the other wireline propositions that are out there because it's not like there isn't cable and fiber to the home already heavily deployed in the U.S.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

And would the goal be to bundle this in with your wireless as a kind of a quad-play?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

So look, quad-play is an interesting thing for me. Some people say, what's your experience from Europe? Everybody went quad-play. The really interesting insight in Europe is that in markets where you have seen more bundling, it's been less customer demand-driven than market structure factors. So if I take Spain versus the U.K., for example. When Telefonica in Spain launched their -- the Fusion bundled product, the primary driver was pay-TV. 22% of households had a pay-TV service in Spain 4, 5 years ago. In the U.K., at the same time, it was 66%. So actually, the opportunity was about further penetration of one of the elements of the bundle that wasn't. What customers tend to identify is that in competitive markets, and the U.S. is one. And if you've got real choice in the individual products, then the cost of bundling is that you end up taking the second best wireless product and you map it to the third best TV bundle in order to get the cheapest broadband connection or a fiber connection. No wonder you get \$5 off at the end of the bill. So I think from our point of view is focusing on being the preeminent wireless carrier in the marketplace is a very, very strong play in the market and so give the customers a real choice. And I think as we broaden out our segmentation and broaden out our proposition mix, that will allow us to do that even more effectively.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

Good point. On the -- when will 5G for mobile be available do you think, the fixed replacement trial?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

So I think there will be 2 critical things, there's the lock down of standards and -- I'm not an expert in this, but whether the Chinese want to go for a separate standard or whether they want to row in and be part of that will be a factor. And then the critical thing is, from a technology and



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engineering point of view, I'll make one commitment, we'll be first. We have been in every generation of technology and we will. What I think ultimately is important is when you come first is how you influence the way the industry sets up. You help to define the rules by which the industry plays. I think the second piece is, when will there be devices, the form factor of mobile devices that will allow for a wider adoption. If I take LTE for a moment and LTE has taken way over 90% of our data traffic in the U.S. But it's only in the mid-50% of our voice traffic because actually voice over LTE came a little later. It was one of the pieces of the standards that was actually fixed a little later in the LTE standard setting. So while it's growing significantly, not all of our 4G devices out there support voice over LTE. So what you see is it's the phases of adoption. So maybe late '18 for the first standard setting, but maybe then a little while later before you start to see available devices, attractive devices with form factor that's competitive.

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

So I can talk to a few more hours, but we have like 4 minutes left. So I figure I'd ask the question here.

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**Unidentified Analyst**

Is there a mic?

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

Any mic out here?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes, there's one on its way.

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**Unidentified Analyst**

Two questions. Is it on?

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**Timothy Horan** - *Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst*

Yes, yes.

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**Unidentified Analyst**

First of all, what I would call the new AT&T when they start to roll out FirstNet, how do you compete with that since in a sense they could be ubiquitous across the country?

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**Ronan Dunne** - *Verizon Communications Inc. - EVP and Group President of Verizon Wireless*

Yes. So let me take that one first and maybe second one coming. So the first thing I would say is that we are the #1 supplier to the public service and public safety in the U.S. We have an exceptionally strong, both reputation and relationships in that space. And the one thing that we're saying, we are responding to RFPs in states that are considering their opt-in, opt-out strategy every day. We're working very closely with our customers to make sure that we continue to position ourselves to be an effective provider of services right across the public service and specifically in public safety. So we're able to already leverage significantly greater coverage in the U.S. than FirstNet would have access to, somewhere in the region of about 700,000 square miles of additional coverage. So that's a really important consideration. So we're very focused. We're not going away when



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it comes to public service and public safety. We will be competing very strongly for all of that business. And we think the capabilities of our network and the coverage of our network means that we actually have more to offer today than an alternative.

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**Unidentified Analyst**

And my second question is, as a senior officer of your parent, what greater integration and cost savings do you see of bringing wireless under the umbrella completely?

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**Ronan Dunne - Verizon Communications Inc. - EVP and Group President of Verizon Wireless**

So I think the question, clearly since early 2014, we're all part -- 100% owned by Verizon Communications. I think where I would focus is, there are opportunity for us to be even more cost effective inside the wireless business. And I think the network strategy that we've enunciated and bringing Hans Vestberg into the organization gives a very clear signal to the fact that we see real synergy in the way we build out infrastructure. The truth is the world is going wireless, but the reality of a wireless network is it needs very strong fiber and wireline capability underneath to support. So we're very much in a one network, one fiber strategy that will ensure that we get real optimization. So the investments we're making to support our enterprise customers today are also supporting the rollout of wireless small cells in urban locations. And we have a very clear line of sight how what we deploy today is supporting not just 4G LTE, but is also enabling our 5G capability in due course. And then I think the second part of driving cost is really around the areas of automation and the use of artificial intelligence, machine learning, where I think we can significantly reduce the cost to serve while at the same time enhancing the quality of experience.

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**Timothy Horan - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst**

We have one over here.

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**Unidentified Analyst**

Can you talk a little bit about your strategy with -- as it pertains to CAT-M IoT and what your vision is of how that's going to roll out over the next 12, 24, 36 months and the opportunity there for you, for Verizon?

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**Ronan Dunne - Verizon Communications Inc. - EVP and Group President of Verizon Wireless**

So look, the first thing I will say is, not an area of my subject expertise. What I would say is in our enterprise space, this is part of what I would describe as the segmentation and solutions orientation. So we've set up our enterprise business with a very clear focus on core segments and looking at areas like health, like agriculture and others and seeing where these IoT opportunities are. We also see in the telematics space with global auto being one of the big drivers. But we've also seen the drive of regulation more recently. The requirements of people to have in-cab recording of usage and driving is also creating some very short-term relevant opportunities. So we see significant growth there. What I would say to you is, some of the early use cases are looking positive. I think we probably need a broader set of use cases. And that's why we're working very closely with certain industry sectors to really work closely with key clients in those areas to say, look, where does your strategy need you to be in 5 years' time? A number of the drivers have been regulatory ones in the shorter term, pharmaceuticals and them being tracked around the U.S., truck monitoring and stuff like that. I think there's more B2B and B2B solutions that will be relevant in some key segments. I think health, pharma, I think agriculture are probably strong ones, transportation more broadly.

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**Timothy Horan - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst**

And what is your IoT growing at now in your business?



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**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

So we're a couple of hundred million a quarter and it's a double-digit growth business. And I think the play there is getting the balance between volume and value. There are some things where what we will do is we will seed the volume. So it's that adoption, a lot of SIMs, which over time will then generate a lot more revenue. So just in the mix, I think it's a combination of SIMs deployed and the higher value-add services. And our telematics business is a great example. In some cases, we get the transport. In some cases, like Mercedes-Benz in the U.S., when I drive one of those cars, the whole suite of services that's coming is actually coming via Verizon. So that's a -- it's not a 10x, it's more like 100x yield per vehicle in comparison to just carrying the transport.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

And do you like that service?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

It's a great service. And I think -- there's a general theme here is that -- and 4G is starting to make it happen and 5G will. The real play is, it's not just ubiquitous connectivity, it's standing up information contextually whenever and wherever you are. That's the thing. When we go to things like VR, augmented reality, when you look at some of these services, it's all about making sure that you have access. It's your personal cloud. You have access to relevant information so that you can make decisions which are real-time, contextual decisions because you have the best information. That's the really exciting thing about this. We process 60 billion pieces of information every single day.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

So last question. Are you working with your content counterparts, Mr. Armstrong and AOL, Yahoo!, are they going to help kind of with the information gathering and processing and evolution?

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Yes. Break it into 2 parts. We have some very good big data and small data capabilities inside Verizon. We have significantly augmented those with the acquisition of Yahoo!. They have some really strong capability there. And then the second thing I would say is for Tim's business, his audience is global, about 1 billion. So he has an opportunity to help me in my business and I have an opportunity to help him, but it's not -- his business is not solely dependent on the wireless business because he has a much broader global audience. Where we do see opportunities though is engagement with the portfolio, really interesting assets, the Yahoo Sport, Yahoo Finance. Those areas are really strong inside Yahoo!. And then our focus on sports with our go90 proposition, with our NFL or NBA. We will start to build experiences for our Verizon customers, which are more immersive by being able to bring the experiences that Yahoo! offers plus our sponsorship engagement and the content we have in that and bringing those together to give a broader, more engaging experience around sport, around personal finance, around news. So I'm very excited about that. And I think we'll be able to tailor more personal offers to our customers as well.

**Timothy Horan** - Oppenheimer & Co. Inc., Research Division - MD and Senior Analyst

Great job, Ronan. Good luck. Thanks for coming.

**Ronan Dunne** - Verizon Communications Inc. - EVP and Group President of Verizon Wireless

Okay. My pleasure. Thank you.

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