

2018-2019 ConnectHome - Starry Connect Program, 12/17/19

Caila Prendergast: Good afternoon everyone. Thank you for joining us today. We're going to give -- we're going to give a few more minutes and get -- give some folks some more time to log on and then we'll get started. Oh, yeah. [tones] You should be connected. You should be connected.

Virginia Lam Abrams: Hi, this is Virginia.

Caila Prendergast: Virginia. Glad you guys -- glad you guys were able to -- okay.

Virginia Lam Abrams: Thank you. I apologize. And the irony of talking about connectivity and having connectivity issues -- so I have apologies for that. We are dialed in on my mobile phone. So hopefully there aren't any sound issues and you can hear us loud and clear.

Caila Prendergast: Yeah. It sounds really good. Are you ready to get started?

Virginia Lam Abrams: We are ready to get started. Thanks so much and thanks everyone for your patience.

Caila Prendergast: Yeah. No problem. Just one quick question. Or do you guys have access to the computer or will you want me to slide through for you?

Virginia Lam Abrams: We do right now. It's just -- if it happens to go out, maybe we'll let you know over the phone or internet connection if it happens to go with that again and then we can just run through the slides manually on our own computer.

Caila Prendergast: Okay. Great. Well, I'll go ahead and get started then.

Virginia Lam Abrams: Thank you.

Caila Prendergast: Yeah. Good afternoon, everyone. Thank you for joining today's ConnectHome USA webinar series.

Today's topic is the Starry Connect program and together with Dina Lehmann-Kim, HUD's ConnectHome USA program manager and myself, Caila Prendergast, we are your hosts. Before Dina introduces our exciting speakers, I have a few housekeeping items.

Our speakers will share their knowledge for approximately 30 minutes and we will reserve the remainder of the time for questions. You may ask questions in two ways. First, in the right hand navigation panel you will see a hand shaped icon. If you would like to verbally share your question, select the hand icon and I will unmute your line in order of questions received or if you would like to send us your questions, feel free to type your question in the chat box in the lower right hand navigation panel. I will then read it out loud in the order of questions received.

If we are unable to address all questions, we will send an email reply after the webinar. All webinar participants are muted upon entry. If you would like to notify our team of any technical difficulties, please send us a message in the chat box. Today's webinar is being recorded and will be available on HUD exchange shortly following the webinar. Immediately following the webinar, you will receive an invitation to complete a survey on today's webinar. We welcome you to complete the survey and share any ideas you may have for future webinars. Dina Lehmann-Kim will now introduce today's speakers.

Dina Lehmann-Kim: Thank you so much Caila, and thank you everybody for joining us today. It's so exciting to have Starry be our featured presenters today. They are the newest internet service provider to join ConnectHome USA as a stakeholder, supporter of the program. And we're thrilled to have them on the webinar today. I've had the pleasure of working with our presenters for the past several years and they are in a word fantastic. So let me just introduce both of them and then turn it over to them.

Virginia Lam Abrams heads communications and government relations for Starry in her capacity. She also leads Starry's digital equity program, Starry Connect, which we'll be talking about today.

Madeline St. Onge is director of government relations for Starry. She leads Starry's state and local outreach efforts, including developing relationships with public housing authorities to expand the Starry Connect program. Thank you to both of you and I will turn it over to you, Virginia.

Virginia Lam Abrams: Great. Thank you so much, Dina. And thank you Caila, both, for all of your support in that wonderful introduction.

Good afternoon everyone. I hope everyone is doing well and getting ready for the holidays, which are just around the corner. We really appreciate everyone joining us today to learn a little bit more about Starry and our Starry Connect program.

We want to be really efficient today because I want to be able to get to everyone's questions and have a bit more of a dialogue as possible at the end of our presentation.

So really, the agenda today is just split into four sections. One, a brief introduction of Starry, who we are, what's our mission, and what is our technology and how does it work. And then going into Starry Connect and how we hope to accelerate digital equity in the communities that we work in and how our program operates.

And then also thinking beyond Starry Connect, we are just one of many internet service providers out there providing broadband connectivity to the home. We hope to be a solution for most people, but we realized that we cannot be a solution for all people.

So we want to also kick off a discussion that if Starry's not the appropriate competitive broadband provider for your community, who might be, and how can you start thinking about how to attract competitive broadband providers to serve your housing communities?

So with that, just a brief introduction of Starry. Who are we? So we are a wide band hybrid fiber wireless internet company. Now that is a mouthful to basically explain that we are last mile wireless broadband connectivity to the home.

What was traditionally known in the past as fix wireless, we call ourselves wide band hybrid fiber wireless because of the massive capacity that we're able to get out of that last mile wireless connection to a home. Our mission is to really build better, more intelligent access networks using that last mile wireless connectivity and to bring more affordable connectivity to everyone and then as many communities as possible.

Fundamentally, we believe that everyone deserves access to high quality, affordable broadband because broadband really is that critical bridge for folks to be able to participate in economic opportunities, educational opportunities, health care resources, and civic engagement. We really do believe that broadband is the critical key.

About our company. So we were formed in 2014 based on that foundational belief that connectivity is a social good. And again, so the reasons that I numerated it's about economic opportunity and providing people access to the world around them. We decided to go about developing our access networks in a very different way by developing our entire technology stack in house.

So that means that every single piece of technology that we deploy in a community we've actually built in house. And we did that in order to one, create a more high quality fixed wireless network, but also primarily to help drive down the costs of building that hardware.

By building everything in house, we can control those costs and then pass on those efficiencies to our customers, which means effectively that we can provide a lower cost, higher quality service. We built our company from the ground up and our focus is on the customer. It's about everything that we build, being focused on providing the best experience possible.

Today we're live in five markets and we have nearly 700 full time employees and that includes everything from sophisticated RF engineers and other mechanical and electrical engineers to deployment teams and installers, customer care, their sales and marketing.

We are backed by a group of very diverse investors, which includes institutional investors like Fidelity, but also real estate companies like related companies. And I'll get to why that's important later on in our presentation.

As I said, we're live in five markets today and that includes Boston, Washington, DC, Los Angeles, New York City, and Denver. And we have a roadmap for an expansive expansion through the balance of 2020, 2021, and beyond. This past year we were successful in the FCC's most recent 24 GHz auction, which gives us access to a 40 million household footprint in the United States.

You can go on our website where we list all the markets where we won those licenses, but they're as diverse as Phoenix, Memphis, Sioux Falls, to larger cities like Dallas, San Francisco, and Chicago. So we do have a wide variety of communities where we will be deploying to in the next few years.

So basically how does Starry's technology work? All of you may be familiar with the concept of fixed wireless. Again, it's last mile wireless, which means we don't have to tear up streets and sidewalks in order to lay a cable or fiber to get that last mile into the home. We do that wirelessly and we do that through what's probably more akin to a spoke and hub model where we have our base stations, our network nodes, those nodes speak to end points, which we call Starry points.

Those points are fixed to the rooftops of apartment buildings. And from there we use in-building wiring to be able to serve all of the underlying apartment units. So it's very simple. It's Starry beams speaks to Starry point and then point goes into our Starry router, which then serve your home with Wi-Fi.

It is a point to multipoint model. So each of those base stations can serve many different endpoints and each of those base stations has a propagation of approximately two kilometers. So we can get a tremendous amount of coverage through an individual base station site in each community.

And what does that effectively mean? That means that we don't have to deploy thousands of small cell sites as you may have read about with some of the new 5G technologies; we actually only deploy dozens of these base station sites within the city in order to provide robust coverage.

So for example, today in Boston we have coverage of 600,000 households in the Boston metropolitan area. And we're doing that with 27 sites. So that gives you a sense of the scale of difference from our technology architecture versus what you may have read about from incumbent folks like Verizon or AT&T or other providers.

So that's just the technology piece. The way in which we really distinguish ourselves in front of the customer is about the customer first experience. And many of you may think, well that's -- that's common sense; right? Who builds a company without putting the customer first? Well, unfortunately, the folks that we're competing against in this marketplace are not -- and I'll say this kindly, are not known for being customer first or being customer-friendly.

And so we said, look, if we're going into the internet service provider business, we really want to change the entire experience that starts with the technology that we build. But it also means the experience that the customer has in the home. So we start with fair and transparent pricing. So today, what I'll call our market rate plan is only \$50 a month, and that provides you with 200 Mbit symmetrical speeds.

It's only \$50. There's no additional equipment rental fees, no additional taxes. There are no other charges other than \$50 a month, and that provides you with no long-term contracts, no data caps, and no bundles. And that's really critical because today, as many of you know, the price of broadband keeps escalating every year, three and five percent, and incumbent providers are

always looking for ways to generate additional revenue. So that's why they add equipment rental fees, Wi-Fi fees, and a variety of other fees that, frankly, really weigh on the customer. We wanted to do things differently. So we said it's all about fair and transparent and single pricing.

Additionally, we have very strict privacy protections -- and for those of you that might be in California, they'll be familiar with CCPA, which was a piece of legislation that was passed in California that today represents the strictest consumer privacy protection laws that are on the books today. We have obviously a presence in California and as we were looking at CCPA compliance, we made a decision as a company to apply all the rights and privileges granted under CCPA to all of our customers across the country. So regardless of whether or not you live in California as a Starry customer and subscriber, you will have all the right supported under CCPA. And we began implementing that last month.

In addition to that, we have a strict adherence to net neutrality. For those of you that may follow technology policy, you may know in 2015, the open internet order was passed that provided net neutrality protections for consumers. Those were then rolled back.

But as a company, when we rolled out our service, we decided that regardless of whether or not the laws were on the books, we would adhere to those net neutrality principles. And we took a step further by codifying it in our terms of service. So all of this, again, is about putting the customer at the heart of everything that we do and putting forth customer friendly policies that really distinguish us in the marketplace.

So as we began rolling out our service, we recognize that \$50 a month, while that is a really great price point, it still is out of reach for many families today. And so we said, what more can we do? And so we surveyed the existing affordable access programs that were offered by incumbents and we identified what the barriers to adoption were.

We spoke to folks like Dina, we spoke to partners, affordable housing partners, and others that work in the nonprofit sector to really understand were people adopting these plans? And if they weren't, what were those barriers? And so we designed Starry Connect specifically to address what we identified as deficiencies so that we could help accelerate adoption of broadband access in public and affordable housing communities.

So our program Starry Connect partners directly with owners of public and affordable housing to offer both free and low cost internet access solutions to residents. What does that mean? That means that our goal is to take away any pre-qualification or complex eligibility requirements and take that burden off of the residents and tie those eligibility requirements directly to the community itself.

So that means that if an individual living within a community that has been designated as Starry Connect, they don't have to jump through any additional hoops in order to access our low-cost access plan. Just by virtue of living in that community, they will have access to it. We decided to take this approach because the feedback that we received from folks by and large was that these complex eligibility requirements really were creating significant resistance and barriers to adopting these low cost plans.

Additionally, we designed our plan to meet the federal definition of broadband. So the Starry Connect plan today exceeds the FCC's definition of broadband, which is 25 Mbits download speed, three Mbits upload speed. We offer a plan that at a minimum is 30 Mbits symmetrical. That is download and upload. These speeds are the floor and not the maximum. And this plan costs folks only \$15 a month. And again comes with all of the same great policies that are included in our market rate plan.

So why is Starry Connect different? And it's different for all of those reasons I mentioned above. We offer a true broadband access plan for \$15 a month. We don't require pre-qualification and we work directly with public and affordable housing owners. We try not to take a one-size-fits-all approach. We determine what a housing community's needs are and we work with these communities to really design plans that make the most sense.

So whether it's offering a mix of both the low-cost plan as well as our market rate plan or also offering a free community area Wi-Fi along with that, we really tried to design an approach that makes the most sense for each of the communities that we work with.

And today, we have partnerships with both the Denver Housing Authority, the Boston Housing Authority, as well as affordable developers such as Related Companies who is the largest private owner of affordable housing in the United States, as well as Beacon Communities and the Neighborhood Developers, which are both Boston-based affordable housing owners. It's important to us to continue to expand the Starry Connect program, again, because we feel so strongly that broadband is such a critical element of people being able to fully participate in society today.

You know, I feel very strongly that this idea of making people prove eligibility to be able to get access to a low cost affordable broadband plan is going to become even more challenging as the federal government continues to revise eligibility parameters for programs like SNAP. That to us is a huge concern because if more people roll out of eligibility, that means that they're going to be rolling out of programs like the ones that are offered by other providers. And for us, that's a massive gap.

And again, another massive burden that we're placing on families and communities that really can't afford to have to pay more for something that is really so critical and essential to daily life. And so, as you can tell, Maddy and I are incredibly passionate about expanding the Starry Connect program, bringing on more partners, and really trying to close that digital equity gap that we know exists in every single community across the United States.

Starry today is focused on urban communities. We will expand more to what I'll call suburban communities, but today we are focused on larger urban communities. And when we talk about the digital divide and digital equity and digital inclusion programs, most people point towards rural areas as being under-connected or unconnected.

But we know the reality is in our urban communities, there are digital deserts and there are communities that are under connected and not connected at all. And so our goal is to really try to

work with owners, both public and affordable housing, to try to find creative ways to bridge that gap and to really take the burden off of the consumer, and really put the burden on us as an internet service provider and as you, as owners and managers and operators of both public and affordable housing.

So as I mentioned before, Starry today, we operate in major urban areas. We're live in five markets. We have this massive roadmap that we're building out, but we will not be able to get to every single corner of the United States and every single community. So where does that leave you if you're not in a community that is slated to have Starry come build out?

So earlier this year we presented a broadband investment toolkit at the National League of Cities summit in San Antonio. This really was a toolkit for municipalities that would help them find ways to attract competitive broadband providers to their communities. Now, we laid out four basic steps that municipalities could take to attract these providers.

We believe that those steps are actually very applicable to public housing communities, as well. Really, the idea behind it was to create your pitch in a sense and to be able to understand the assets that you bring to the table because these assets are actually very attractive to new technology providers like Starry.

You know, we're one of many new technology companies that are providing fix wireless service to communities across the country. And if we can't come build in your community, there are likely dozens of other folks that would want to come in and help serve your community.

So how do you think about this within the context of your housing authority? Well, you definitely have unique assets that make you attractive for someone to come in and build connectivity. Those things include access to detailed data about the size and the scope and the broadband needs of your community as well as your ability to effectively communicate and really rally and mobilize your community stakeholders, whether that's local elected officials, community advocates, or even your residents themselves.

Additionally, if you look at the infrastructure of your housing community, whether that's access to rooftop or other high vertical assets, those things can serve as key infrastructure points in a fixed wireless network. And so your ability to monetize those assets can, one, generate revenue for you as a housing authority, but then it can also simultaneously help you meet your digital equity goals.

And so I do want to impress that if Starry is not able to help your community, there will be other service providers that can, it's just a matter of how do you kick off that conversation and how do you really market yourself as being a place where people should be clamoring to come provide affordable service to your residents?

With that, hopefully I didn't speak too quickly, but we'd love to take questions and really talk a little bit more in depth about Starry and about Starry Connect. I did -- and I apologize if I did go through very quickly. I did want to stay away from reading the slides as I know that's not a really

fun way to present any information is reading slides to folks. But I'd be happy to take any questions that you might have about Starry and about our program.

Caila Prendergast: Great. Virginia, I just wanted to remind folks that we have two ways to ask questions. You can either type it in the chat box and I'll read it out or you can raise the little hand icon and I'll unmute your line so you can ask the question live.

We have a question here, Virginia. "How do you know if Starry serves our community?"

Virginia Lam Abrams: So we have a roadmap and a list of cities that we can provide afterwards of our expected expansion. And so today, as I mentioned with the acquisition of the 24 GHz market licenses, it gives us access to 40 million households. It's on our website, but we can follow up with an email with that list of cities. If there's a specific city that someone would like to ask us about, we can certainly answer that now. But it is a fairly long list.

Madeline St. Onge: I would just add to even the -- some of the cities that we did one and the way that they divide is kind of they call partial economic area. So even if it's not technically that kind of major metropolitan city that it lists if you're kind of next to it or nearby, it can fall into where we have a license.

So don't discount yourself just if you don't see a name there and you're not that city. We can definitely look into see if our license covers that.

Caila Prendergast: Great. I'm going move on to the next question. "When you roll out in the Chicago area, will that consider the greater Rockford area as well?"

Virginia Lam Abrams: So the Chicago area does not include Rockford. That is under a different license. We do not have the Rockford license, but I will say this. So having access to spectrum is one of the key components for us being able to build our network.

But I will say it is not a gating factor. The FCC in its Spectrum-Frontiers proceeding set aside the lower 37 GHz band for what they call coordinated sharing, and they are currently in the process of setting the rules for sharing within that band.

But once the framework to those rules is released and voted on, that will provide us access to even more markets because we'll be able to proactively go after communities that may raise their hand and say, hey, Starry, we want you guys to come here; we have the assets and the resources that you need to build and we'd like you to come build in our community. And then we can proactively say, that's great, and then we can apply for the coordinator license through the FCC to be able to then go serve in that community.

The way our technology works, and this is probably getting a little bit too in the weeds, is that our base station technology can work on a range of frequencies. So it can work down to 24 GHz and in our markets today, our five markets, into the 37 GHz band as well. So we have the optionality to deploy on the licenses that we won in the auction, but then to also utilize this coordinated shared band that the FCC is making available, as well.

Caila Prendergast: Great. Thanks for that, Virginia. Another question, can we go back to slide five for a second? I just wanted to take a look at some of the info on it again. Awesome. So we'll leave that up there while we go on to the next question. "If the wireless signal only reaches two kilometers, how many nodes do you have in your current five cities to send out the signal?"

Virginia Lam Abrams: So I gave an example of Boston. Today, we are passing coverage in Boston is approximately 600,000 households and we have 27 base station sites. So I honestly -- off the top of my head, I don't know the number for all five of our markets. But that gives you an example of Boston itself.

So for us, for our metropolitan area, when we talk about base station size, we're really talking in the dozens, like depending on, again, geographically, depending on the size and the density, it can be anywhere from a dozen to two dozen too I would say for like an area, say like Los Angeles, the Los Angeles Metro area, it's much larger, geographically larger, that would be up to three dozen or more depending on how you define LA Metro. And so the scale of it is very different and it's very different for one main reason because we are providing a fixed service to the home and not a mobile service.

So a lot of the discussion you see around small cell sites and 5G, that's really in the context of a 5G mobile wireless implementation. And so when you're seeing numbers that are quote, you're talking about thousands of small cell sites in one community and that's primarily driven by the fact that those small cells are actually trying to reach mobile devices -- devices that are moving around; right?

So they don't know where that device is going to be because it's constantly roaming; whereas for us, we can have fewer fixed sites because we know exactly where we need to deliver that internet signal to; right? So it goes directly from our base station to an end point that we know exactly where it's located. Because fortunately, apartment buildings and homes don't move around or they're not supposed to at least.

So it makes it a bit easier for us and that's really the main difference between us providing a fixed wireless implementation versus a mobile wireless implementation.

Caila Prendergast: Thanks, Virginia. Next question. "You mentioned San Antonio Housing Authority. How involved in the SAHA playbook of the digital mesh network they have built up on their properties using solar powered repeaters, per the playbook they introduced at the HUD ConnectHome summit in DC?"

Virginia Lam Abrams: So sorry, I think there might have been a misunderstanding. We don't work with the San Antonio Housing Authority. We presented our broadband investment toolkit in San Antonio at the National League of Cities Summit back in November. I'm not familiar with San Antonio's mesh network, so I'm sorry. I apologize. I can't comment on that.

Caila Prendergast: It's okay.

Virginia Lam Abrams: Yeah.

Caila Prendergast: Sorry -- no. Go ahead. Sorry.

Virginia Lam Abrams: Oh, no, I was going to say our -- just to as a clarification, because I know they asked about mesh. So Starry is not a mesh network. So we're termed what you would call a point to multipoint. A mesh architecture is very different and we don't utilize a mesh architecture because for us, every hop that you take in a mesh architecture, it actually reduces the capacity to the next node.

And so for us having robust capacity, multi-Gbits of capacity through each stream is actually critically important because it allows us to serve, A, more end points and B, it provides just a more robust internet connectivity experience for users. And so we don't utilize a mesh architecture for that specific reason.

Caila Prendergast: Great. Thanks. We'll move on to the next question. This person isn't as familiar with internet connectivity, but has a question regarding your message to promote digital equity. Is your company targeting expansion in digitally underserved communities like Indian country and rural communities in the Western Plains?

Virginia Lam Abrams: So we -- our digital equity program is really a function of where we are live and serving subscribers today. So our focus has been mainly in our five markets and striking partnerships with the public housing authorities as well as affordable housing owners within our five markets.

As we expand further out west and we have licenses in Arizona on New Mexico, as well as other parts of the western United States, we would love to work with those communities to expand and to bring Starry into tribal communities as well as what I'll call more exurban areas. Starry's technology today is not suitable for rural. I just want to be very clear because of our propagation characteristics and really the assets that we need in order to deploy our network.

So, one, we need vertical assets, which is height, so either tower assets or manage rooftops, but then ultimately we also need to ensure that there is fiber back haul in the area. Unfortunately in many rural communities, you either don't have fiber back haul or there may not be the presence of any type of what I'll call tall vertical asset. And so those are definitely gating features for us in terms of how we deploy our network.

Starry really is suitable for urban communities, suburban communities, and what I'll call some limited exurban, but we are definitely not -- unfortunately not a solution for rural today. Hopefully that answered the question, but we would love to work with tribal communities as we expand our footprint.

Caila Prendergast: Awesome. Thanks, Virginia. Next question coming from -- so -- okay. As someone who doesn't have a background in internet engineering or infrastructure, where could I find a more detailed technical explanation for how last mile wireless works? Is that something that I could Google or is that unique to you?

Virginia Lam Abrams: Last mile wireless is definitely not unique to us. There are a lot of what - they're called WISP Wireless Internet Service Providers, and there's actually an association called WISPA that represents most of the Wireless Internet Service Providers across the United States.

We're also a member of WISPA. While last mile wireless is not unique to us, what is unique to us is the way that we do last mile wireless and how efficient we are in terms of delivering that capacity and that speed from our base station to the end point. So traditional fixed wireless, so these operators, they've been around for decades. They do what's called point to point communications and typically that's done on unlicensed spectrum, unlicensed frequency.

And so while this is a really great solution, you'll see a lot -- many of these WISPs operating in exurban and rural areas. That's fantastic because, one, the population density is not very high. And two, they have more latitude to be able to set up and use these unlicensed frequencies because there's not as much congestion and/or competition for using those frequencies. Starry does it differently because we use licensed frequencies and licensed and it's also millimeter wave, which provides us high capacity; right?

So we're able to serve those dense urban areas where there's lots of people living within a square mile. That's sort of our secret sauce is our ability to build these base stations -- these network nodes that can serve many people within a short distance with very high capacity. We do that on those licensed frequencies and we do that on a point to multipoint structure. So that means one base station can speak to many different endpoints versus a one-to-one.

And so while the concept of last mile wireless is not unique or new, what is unique and new is the fact that we've built technology that gives us that much efficiency where we can go from one point and speak to many end points and deliver very high capacity, robust broadband connections to many different buildings simultaneously.

Caila Prendergast: Okay. Next question. "If the property address does not have Starry available yet, what exactly happens when we provide the information to be on the wait list? How long will it be on the waitlist?"

Virginia Lam Abrams: So depending on where you're located -- so, for example, if someone -- let's say in the Boston area or in one of our live markets put in their address and we're not currently available in their particular building or on their block or whatever it may be, there's a couple of different things that happens. If you are in an apartment building and you are in an area that we call serviceable; right?

That we can actually service your building because our network is built in your neighborhood or your community, then one of our representatives will reach out and say, hey, you've reached out to us. You're very interested in Starry. Here's the next step that you can take. Introduce us to your building manager or whoever it is and we'll work with them to provide access to Starry into your building. And that's how we work on one end.

Now, if Starry is not yet available in your particular neighborhood, again, I'm using Boston as an example. What will happen is you'll be notified when that particular neighborhood gets lit up. And then you'll also then get contacted by representative from Starry saying, hey, you've expressed interest in having Starry come to your building. We're more than happy to work with you and collaborate with your property manager, your condo board, whoever that may be, to bring Starry to your building. And that's how that works.

Now, if you are signing up for a community where Starry is currently not active at all, you would be put on a notification list for future notifications when Starry does come to your city. And if you are in -- on a, what I'll call a build list where your city is coming online within the next six to 12 months, you'll get regular communications.

And by regular, I mean like probably once or twice a quarter, just giving you an update on when we're coming to your community. And then as we get closer to turning on serviceability, more detailed information around, hey, how can we work with you to bring Starry to your building specifically? So it's tiered depending on whether you're a live market, an upcoming market, or an expansion market that's still a year or two down the road.

Caila Prendergast: Great. We have another question here. Will this work in Puerto Rico?

Virginia Lam Abrams: We do not have a presence in Puerto Rico. And we -- assuming that the FCC, again, makes 37 GHz, which they should, available in Puerto Rico for the coordinated shared portion, there's no reason that we couldn't expand to Puerto Rico if there is interest and a desire for this to expand to Puerto Rico, but we currently do not have licenses for Puerto Rico.

Caila Prendergast: Okay. Great. Next question. "Are there any major threats to Starry Connect or Starry in the long-term that are worth discussing? Is there any kind of timeframe or commitment to how long Starry will be offered at these rates?"

Virginia Lam Abrams: Are there any threats? Not that I'm aware of. I mean, we see competitive response from the incumbent providers in all the markets that we're operating in. I wouldn't call those existential threats. I consider that actually a competitive market working well; right?

So in the markets that we're live in, we've seen folks like Comcast and Verizon and All Keys and RCN offering in response to Starry being present, very competitive packages that they try to entice folks with, whether they're trying to retain them, if folks are calling them to disconnect their current service. And so for us, we actually think that's a win-win; right? Like, if the incumbent providers in the market are responding with either better service or lower costs, that means that we're doing something right.

So in terms of threats, we think that's a healthy response and that's the right response. We don't see that as being a threatening response because to be honest with you, we 100 percent stake our reputation on how we interact with the customer, how we treat them from the moment that they get installed, to our ongoing customer care.

We would happily compete with the incumbents all day long on that service aspect. So while it's definitely a threat per se, from a competitive market response, we think that it's welcome; right? And it means that we're doing something right.

In terms of the price point of \$15, we don't have any plans to change that. I would hope that in the future we'd even look to perhaps even the lower that threshold as we grow. Today we've priced it at \$15 because, one, we think it's fair, but it also allows us to get at least a decent payback on the actual equipment that goes into the consumer's home so that we're not taking a loss for longer.

And so the \$15 a month plan allows us to, again, be able to provide a great digital equity program. But it also allows us over time to be able to at least recoup some of the costs of the CPE that goes into the customer's home. It's a longer period, obviously, compared to our market rate plan of \$50, but that's something that we're more than willing to accept because we're committed to this program.

We definitely want to expand into more housing authorities and to more communities. And so I had mentioned that Related Companies is the single largest owner before will housing in the US today. We have connected over 3,000 of their units -- and in the New Year and we'll be connecting another 1,000 resident community in Queens with them. So we are really excited to grow that footprint on the affordable housing side and we're looking to definitely add more public housing communities to our roster, as well.

I will say this, because of the unique way that we can stand up a network, we have housing communities that are very motivated to bring Starry to your community. We can find ways to accelerate that deployment. That goes back to our whole -- we don't want to take a one-size-fits-all approach and we don't want to say no to opportunities.

So if there are housing communities out there that are very motivated and want to be a solid partner with us, we will find a way to try to get there. And I just want to be very clear about that. What's exciting about being an early high growth company is that we can be very flexible. You know, we're not terribly hierarchical.

We don't get bogged down in corporate let's have a meeting about a meeting about a meeting; we really try to work to get things done into the finish line. And I want that to be very clear that we are very committed to this program and want to expand it as much as we can and as quickly as we can. And we're always looking for motivated and willing partners to help us with that.

Caila Prendergast: Awesome. Thanks for that response. And really all your responses have been great. Thanks, Virginia. I'm not seeing any other questions right now. We'll give folks a few more minutes to see if anything comes to mind or if there's anything else you kind of wanted to expand on.

Dina Lehmann-Kim: This is Dina. I just wanted to mention, and I forgot to mention this to Virginia and Madeline, there is some HUD guidance which I've tried to put into the chat that will -- if you are interested in using your rooftops for example, there's some HUD guidance about that

which you really need to make sure you read and so you familiarize yourself with some of the rules that govern how you can use these types of assets. I just want to make sure you guys all know about that.

I've put the URL there. I've heard it might not be working for some people so you can do a search. And I put in the PIH notice number. It's 2017 for the year 2017-24 and it was issued on November 29th, 2017. So I just want to make you guys all aware of that. And if you have any questions, let me know.

Virginia Lam Abrams: That's a great point, Dina. And that's -- that's a fantastic point. And I -- I do want to say we have actually worked with a number of different housing authorities on -- not the Starry Connect program specifically, but on rooftop leases and have worked to get HUD approval for those. And so we are very familiar with that process.

We know how that process works and our team is very good at ensuring that any of the agreements are within the parameters that HUD sets forth and are structured so that HUD will approve. And we've had a number of those rooftop leases approved through HUD. And so absolutely we are aware of it on our end and for sure structure these agreements so that the housing authorities are in full compliance.

Dina Lehmann-Kim: That's awesome. Thank you, Virginia. I know it's a new area. So this -- though it's two years old, I don't believe that there was a precedent for this guidance before.

Virginia Lam Abrams: That's right.

Dina Lehmann-Kim: So we're all in new territory right now. So it's important that we try to stay abreast of things. Thank you.

Virginia Lam Abrams: No, absolutely. And it's a question that we've actually received from a number of housing authorities and we try to reassure folks that we've definitely gone through this.

Actually, we had submitted -- this was a while ago; our lease agreement and they had been submitted to our regional HUD office up in New England right before the government shutdown. So that was unfortunate.

But I will say this. Once everything was back up and running, we got feedback, we incorporated the feedback and then we were able to then get the agreements approved. So save for that unusual and hopefully not ever to be repeated again blip, it was a fairly easy process; right? So long as we incorporated the feedback, it was pretty straightforward.

Dina Lehmann-Kim: That's great. Great to hear.

Caila Prendergast: So we had another question come in. Can we reach out to the starry personnel directly for future questions or possible possible partnerships? If so, how?

Virginia Lam Abrams: Yes. You can absolutely reach out to us. Mady and I are very easy to reach. I'm just virginia@starry.com and Mady is just Mady, M-a-d-y, @starry.com, as well. You can also reach us at connect@starry.com that email alias actually goes to both Mady, myself, and another one of our colleagues.

So email is the best way and I'm looking at the chat box and yes. Brenda from Phoenix, we would love to connect and I know that we're actually going to be out in Arizona in January of this year. So if we are in your neck of the woods, we'd love to set up a meeting and chat with you as well. I believe we'll be out in Tucson speaking at a community event there.

Caila Prendergast: Great. And I just quickly typed in your emails and put them in the chat box so to speak for everyone -- Mady, I hope I spelled your name right. I'm not seeing any more questions.

Dina, I don't know if you had anything else you were interested in discussing?

Dina Lehmann-Kim: No. Not necessarily, but this has been so comprehensive. I've learned a lot and I hope everyone else has, too. And I do want to say that I'm sure now you all realize why we're so happy that Starry has joined as a stakeholder for ConnectHome USA.

As some of you on the call may not be part of the ConnectHome USA initiative, we extended the invitation to other public housing members and [inaudible] grantees, [inaudible] trust grantees because we wanted to make you aware of Starry and the opportunities that they have for our communities, but also the important conversation that Virginia discussed about how to work with other ISPs.

And I really encourage you to look at the toolkit that she mentioned which I pulled up and I just lost, but I think it's betterbroadbandnow.com. So I highly encourage you all to read that. And check it out. And I'm sure Virginia and Mady would be happy to answer any questions. I don't want to add more to your plate, but I've -- but based on what I've heard, I think that would be true.

Virginia Lam Abrams: Absolutely. We're happy to answer any questions. Again, if folks on the call think of anything after this call that strikes you, please don't hesitate to send us an email. We're happy to talk to you about Starry, to talk to you about how we've worked the program with other partners -- I'll say. It's a variety of different models. We, again, are testing a lot of different things because we're trying to, again, really understand our communities and why people do or don't adopt broadband.

I'll give you an example. So with our affordable housing partners here in New York, they decided to choose one community where they would assume the cost of Starry Connect for anyone who wanted it in the building. And as of today -- and this launched at the end of June of this year, and we're about six months in and as of today -- we still only have 55 percent penetration in the community.

This is for something that's 100 percent free product, Starry Connect in the home; right? So this is not a common area Wi-Fi product. This is internet in the home. The cost is being assumed by the owner, and we still only have a little over half of the residents subscribing.

And so we are going to commence a survey to really try to understand why the other 45 percent have not subscribed. Is it because they're stuck in a long-term contract or is it because they don't feel that they have a need for broadband in the home because they only need a mobile connection or do they not have the appropriate device in order to be able to utilize broadband in the home?

So we're trying to really try to understand what are those barriers? Why aren't people adopting? Is it a digital literacy issue? Is it a device issue? Is it a contract issue? So that we can really, as we move forward and expand our Starry Connect program throughout our partners affordable housing portfolio, that we do it smartly and in a way that really gets as many people to adopt and really use the broadband that's available to them. So it's really interesting.

We're lucky that we have such great partners and our partners and in Boston and Denver have just been absolutely fantastic. And we're really looking forward to accelerating that and adding more communities.

And knock on wood, in the New Year we're hoping to announce a couple more housing authority partnerships as well. So yeah, we're very excited and I hope that from this we have more folks that we can partner with in the future.

Dina Lehmann-Kim: Yeah. And I would also just add one other thing, as well, is that even as we're expanding, but even if we're not expected to come to your community soon or you might not see yourself on the road map, please don't hesitate to reach out.

We're happy to be a resource, especially as you're thinking through some of the things that we listed on our betterbroadbandnow.com website just in terms of our toolkit and how you can look to other possible solutions for connectivity needs. There are some helpful resources on that website as well, but we're always happy to hop on a quick call and maybe brainstorm some potential solutions for you as well.

Virginia Lam Abrams: Well, Caila and Dina, I think that's all we have on our end, but thank you so much for inviting us to participate and we're really grateful for the time and we really appreciate being able to talk about Starry Connect.

Caila Prendergast: Great.

Dina Lehmann-Kim: Yeah. We, actually, if you have time for one more --

Virginia Lam Abrams: Sure.

Dina Lehmann-Kim: Someone asked if the results of the surveys will be made public or available in any sense.

Virginia Lam Abrams: So that, to be honest with you, depends on our partner. And so if they allow us to make the survey data public, we will. We'll make -- we'll do a press release and announce what we have found. But it's really dependent on whether or not our partner will bless that.

So that said, I'm sure if it's not made sort of available in what I'll call a broad sort of public way, if they're not comfortable with that, perhaps what we can do is maybe share that data with Dina and Caila and they would be able to share it with all of you.

And then we can kind of make it -- I want to be respectful of our partners' privacy and vis-à-vis their residents or their tenants. So I want to take direction from them and hopefully they'll let us make it public. But if not, perhaps what I can do is just ask them if we can make it available to Dina and Caila to be able to share with you in sort of I'll call it more private fashion.

Dina Lehmann-Kim: Thanks, Virginia. I mean, I think even if the report itself wasn't available, just broad brush findings would be really helpful to me personally, but also to the person who was asking.

And our community as writ large, I think that that would be super-helpful because it is something that we are all trying to understand is why, especially in this instance where it's free, why wouldn't somebody be using it? Is it, like you said, a question of the right device? Is it a lack of training? What is it? So that would be helpful to know.

Virginia Lam Abrams: Okay. Absolutely. Absolutely. We'll make sure that we can, in some way, shape or form, make the data available.

Dina Lehmann-Kim: Thank you so much. Caila, it sounds like there isn't any -- there aren't any more questions?

Caila Prendergast: Nope. Nope. Thanks for taking that last one.

Dina Lehmann-Kim: Yeah. Thank you. Before we close, I want to thank our wonderful speakers. Thank you so much to Virginia and to Madeline for taking the time to share today and to Caila for organizing.

And I want to put a note out for everybody that we're -- our next webinar in January in the New Year is going to be about the census and how you can help residents get counted and understand the process. I think very, very critical. So please stay tuned. It'll be January 28th at 2:00 p.m. So please mark your calendars now.

We will send out a registration as soon as it becomes available. In the meantime, happy holidays to everyone and we, the ConnectHome USA team, look forward to working with you in the New Year. Thank you so much everybody.

Virginia Lam Abrams: Thanks, Dina. Thanks, Caila.

Dina Lehmann-Kim: Thank you.

Virginia Lam Abrams: Happy holidays.

Dina Lehmann-Kim: Thank you.

Virginia Lam Abrams: Bye, everyone.

Dina Lehmann-Kim: Thank you, you too.

Virginia Lam Abrams: Bye-bye.

Caila Prendergast: Thank you.

Virginia Lam Abrams: Bye.

Dina Lehmann-Kim: Bye-bye.

(END)