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Second Panel - Successful Broadband Business Models - Part 2

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MALE SPEAKER: In our next group, we'll also be looking at models. It will be moderated by Michael Ort, Co-founder, President, and CEO of Praxis Associates. He has over 30 years telecommunications experience in the wire line, wireless, and cable communications sector. As a broadband development corporation, Praxis brings consulting, planning, design building expertise to middle mile and last mile network creation. With nearly 1,000 miles of middle mile fiber deployed and 40,000 fiber to the premise, customers connected practice has been a key factor in developing California broadband services. It's affiliated company, Inyo Networks, Inc. is a facilities-based, competitive local exchange carrier offering fiber-based voice data, video services in California and Nevada. Thank you and Michael.

MICHAEL ORT: While we're getting started here, I just wanted to thank the NTIA for this terrific program, as well as yesterday's program with AnchorNET. I suspect that one of the reasons I'm standing here is because of a project that the NTIA and the California Advanced Services Fund supported on the eastern Sierra. It was the Digital 395 Network, and the three people that were sitting up here on the panel before were actually either a customer of ours or a supplier of ours. We all do work together. I believe that we just recently signed a 12 strand dark fiber contract with Frontier. Kirby and I have been in touch with each other on the Kennedy Meadows project that he just mentioned 'cause they're connecting into the back hall on Digital 395, and we work with the Vast Network folks to get from LA to Bakersfield, and we're talking with them about interconnecting with somewhere in the northern part around Auburn so that our networks can work together, so it's a -- it's a great collaboration that we're seeing in California, and I'm delighted to be asked to moderate this panel, and we've got a great group of people. The last panel was kind of mentioned as a private sector approach, and as Sandeep mentioned, there's probably no pure model. There is all a mixture on a continuum of public private. The

telecommunications industry since about 1877, the year after Bell developed his telephone, has always been having a very close relationship with government. I mean, we all know about Bell Labs. Bell Labs was largely funded by government funds, the Defense Department and so forth and so on. And through the years through a lot of these programs, if you look at it, we really are talking about a great public private partnership that's lasted, you know, over a hundred years. So with that, I'd like to introduce the panel, except that my -- sorry here, my -- stay with paper. It's a better deal. Anyway, I'd like to introduce Paul Romero from the Yurok Tribe. He's the Director of Information Technology. Jory is with the City of Santa Monica. Mr. Ellsworth is from the City of Ontario, and all of them have a very unique program, and as soon as I get back to my notes here I would like to start off by asking each of you if you would please each describe to me and to the rest of the folks in the room here the nature of your project, how you approached it, and just give us a brief synthesis of it. We've got about -- we're gonna shorten this part of the program to make up for some time. Okay. So, Jory, would you start by telling us a little bit what's going on in your community in Santa Monica, the background of the project and so forth?

JORY WOLF: Absolutely, Michael. So we started back in 1998 believe it or not, and this was a wakeup call to the 1996 Telecommunications Act, and we decided that at the time it was called the Information Superhighway, we needed to be on it, and that the future of Santa Monica actually was absolutely gonna be contingent upon our playing within that space. We put together a master plan, and I won't bore you with the details of that, but it was actually adopted by city council in May of 2000. We then went about and created a local area network for the city, the schools, and the college so that we'd be able to share in bandwidth. So I invested $530,000.00, a loan from the general fund, to build out these 56 facilities, public facilities, and in

return I saved that amount of money in one year. I replaced 56 fractional T1 circuits from our entrench carrier with broadband fiber and created a 4 gig network at that time. The network has since now grown beyond the land. The savings that I was able to achieve of about $900,000.00 a year using fiber optics that we owned and we operated were actually returned back into an investment fund for us to continue to grow it, not only for public purposes, but also for businesses and economic development in Santa Monica. We now have over 150 businesses, very high tech, new media, and entertainment businesses, including all the hospitals and all the physicians, clinics, and all the hotels in town using a 100 gigabit network at very affordable rates as an alternative to the other providers and a very expensive local carrier. We have now a project where we are extending actually the end of this month extending our broadband services 1 gig to 400 low income families in ten multi-dwelling units within Santa Monica, and we will continue to grow the network incrementally, on demand, and in a manner that doesn't affect the taxpayer to any great degree.

MICHAEL ORT: Great. Elliott, would you mind?

ELLIOTT ELLSWORTH: Well, Jory's got a great model, and we really look to them, and I've been out there several times to take a look at what they've been doing. Our story started in about 1999 when we annexed 12 square miles of dairy land, and part of the vision at that time was to have a broadband fiber optic based network, and that has taken us a number of years to make that come to a reality, but it's an area that we'll have 47,000 dwelling units and businesses associated with that as well, and with the downturn in the economy, it kind of slowed down a little bit, but we're ready to make that happen now, and we've partnered with Inyo Networks to be our operator and provider of a gigabit service in that area, and our service will be active this week. We'll have a gigabit symmetrical service as of this week. That's not where we stopped,

however. We also have a municipal ring that we'll be putting in place, and then have excess capacity on that ring to serve underserved commercial areas. Some of our businesses are living with 3 megabits per second service right now, so we're in an urban area. I guess relative to LA, we're maybe rural, but we're considered urban, and it just seems that 3 megabits per second is not enough for some of these businesses in that area, and so we're happy to bring our service and expand our service into those underserved areas as well.

MICHAEL ORT: Great. Paul, would you mind giving us an overview of what you're doing in Yurok Tribe?

PAUL ROMERO: Sure. So my name is Paul Romero and our story goes back about 11 years ago when I started working for the Yurok Tribe up in northern California. When I started working there, the situation on the reservation was that most of it didn't have even telephone service, whereas many of the other individuals that I've heard today had a lot of something to work with. We had nothing to work with, so my initial plan was to try to create a fixed wireless service on the reservation as many of the community members had actual generators and solar power in their house, and so with that in mind, I actually applied for a Community Connect grant, which was funded, and we were able to create what we call Yurok Connect. Yurok Connect is a fixed wireless service that provides up to 3 megabits per second to users. For the most part, we have about 80% coverage on the reservation. We do still have individuals that we can't get to just because of the topography where we're at. We're in, you know, canyonous mountains, and it's extremely difficult even with the microwave network to get to many of these people's homes.

Our next steps where we're moving toward is we actually partnered with the Karuk Tribe, which is a neighboring tribe, and they also applied for a Community Connect grant and

have actually -- they're also providing a fixed wireless service much as we are, and our next step is -- we call it the KRRBI Project, which is short for Klamath River Rural Broadband Initiative. The KRRBI Project is a project where we're going to be running approximately 80 miles of fiber. This is all middle mile backhaul fiber. We are also gonna be hooking up some schools and fire stations and whatnot along the way, but with KRRBI, or once we move into the KRRBI phase, we'll actually be starting -- the Karuk Tribe will actually -- or they already have their CLAC license, so we'll actually be becoming an actual telephone company rather than just the public utility district that we're presently operating under.

MICHAEL ORT: Great. So as you guys were contemplating how to approach your broadband issues, you were starting off with a certain set of goals and principles that the city was trying to -- or the tribe was trying to achieve. So my question is how did you come about selecting this particular model? I mean, going it on your own, moving forward, how did you embrace that? How did you work that through in your communities?

JORY WOLF: In Santa Monica, it was bootstrap. We ended up having to do this in a creative way. Santa Monica -- many of you have probably been there. We've been trying to deal with parking, traffic, congestion issues as everyone else who was trying to get here on the freeway is doing today. But we wanted to build a network, and we wanted to be in control of that network, because we have some extremely high costs for broadband within Santa Monica at the time that we started. The entrenched CLAC was charging $3500.00 per month for 10 megabits per second. We had to do something about our future, and we decided that for economic development reasons, but also for livability, mobility, and all these sort of smart city initiatives that we wanted to implement, we had to own this, we had to be in control of this, but also we wanted to be able to set a rate structure that others would be able to follow, an alternative

for businesses to use and seek out in the event that there weren't affordable options for them in Santa Monica. We wanted to nurture the companies that were there, we wanted to attract new companies, and we wanted to create a tech industry, and we've done that. We set the rates and others have dropped their rates. They are now about $100.00 below us. We have created Silicon Beach and a tech community that thrives with the broadband that we offer and the investments that are being made by others, because we prime the pump.

MICHAEL ORT: Elliott, could you expand on --

ELLIOTT ELLSWORTH: Sure. You know, I think this has been a long arduous process to figure out do we really want to get in the business of broadband, and you know, we've asked the questions: Does it make sense to pursue a Google? Does it make sense to let the incumbents tackle this? Does the city have a place at the table here? And we just kept coming back to the point that, you know, we want the best opportunities for our residents that we can possibly have. In this new model colony area, this 12 square miles, 13 square miles, they're paying for all the infrastructures, so they're gonna put in new roads and new storm drains and broadband, so it's really their network that we're installing, and we've been through, you know, lots of analysis and tried to figure out ways that we can make this work, and I think we're really at a great place where we feel comfortable that we have a fantastic model, and we're really giving back to the residents what they're investing in, so they're paying for this. They're paying for all the pieces of the community that will be nice and wonderful, and they're gonna get a full open broadband solution when they move in there, and I think they're real excited about that. Now, you need to understand that there was maybe 10 to 12 feet of manure that this dairy land consisted of. They had to peel all that away, and so there's nothing really attractive about that location prior to scraping that away and then coming in and developing new homes. The broadband actually is

one of the main attractions to the area now, and the developers that we were working with, again, why do we have to pay this expense? Why do we need this? Nobody wants this. Now they're saying this is actually what's attracting people into this area. There's no more manure by the way. It's just really beautiful homes and community centers and pools, and it's a great looking place, but broadband, gigabit broadband is really what's attracting people to this area.

MICHAEL ORT: Great. Thanks. Paul, do you want to talk a little bit about how this came about for you guys, why you picked this model?

PAUL ROMERO: So I think for the Yurok Tribe, we really didn't have much of a choice. We had to have a government model of some kind being as rural as we were. For the most part, when you're as rural as we are, I mean, our entire system only has about 130 subscribers on it, so when you're that rural there just isn't like a business model that really fits it. Granted, you know, as we grow and become this new organization once the KRRBI Project is complete, that may change. We may move over to some kind of a business model, but granted based off the numbers that we're looking at right now, it's probably gonna have to be some type of a nonprofit business service model. These rural locations just don't have the income capabilities to support a for-profit business. Again, you know, it really was necessity that drove us to having to create our own section of our public utility district to handle the broadband service. I hope again that as we move forward into the KRRBI Project, we'll be able to expand on it.

MICHAEL ORT: So in the private sector model, it's pretty clear, I mean, the portfolio of investment is gonna be based upon the best return of investment or some political pressure and so forth, but in the models that you guys have chosen it's not the same thing. You already have in some of your areas local incumbent providers, so you don't have some of those same

challenges of getting just basic services to folks, so how do you work with your community in terms of understanding the direction that you're gonna evolve the network? Each of you have a different type of situation. Elliott, you're working with the developers quite a bit. It's pretty well tied with that. Jory, your program is less structured in that way as development comes on, but you have plans. The question is: What kind of input in the community? How do you know you're satisfying the needs of the community and how you're following what the intent of and the goals?

JORY WOLF: When we put together our telecommunications master plan, we reached out to the community, and we surveyed every tech business that we can find in our business license database. It turned out that there were about 260 businesses. We actually talked to 100 CIOs in Santa Monica, and then we also reached out to property development companies and talked to property management companies and to property owners for commercial properties and asked whether or not they would adopt the use of a community broadband system in the event that we built one. The overwhelming answer was, "Yes." The question was, is it affordable? And our answer was, "Yes, it will be more affordable than what you have available to you today, and it will be obviously more reliable, and it will certainly be of a much faster capacity." We have addressed all of those issues. We continue to work with the college, with the hospitals, with the school district. They all now have abandoned our initial land and are now using CityNet, which is our commercial network, which is not just dark fiber. We offer both dark fiber and also offer managed lid services as well. So our lowest tier customer is 100 meg, and we're reaching out to businesses and tuning what our service offerings are so we can go that low, and then our highest offering right now to any of our customers, our 10 gig customers. The city has

already adopted 100 gig, but we have yet to find 100 gig customer, but we are hoping that that's gonna happen because we see how quickly this ramps up.

MICHAEL ORT: Just out of curiosity, what do you typically charge for a gig service?

JORY WOLF: $3,000.00 a month.

MICHAEL ORT: $3,000.00 for a gig, okay. Elliott.

ELLIOTT ELLSWORTH: So we have great incumbents in our city. They provide video service and telephone service and now broadband services, and they frankly weren't interested in letting us build the infrastructure and working with us, so we understand that. We're side-by-side with a lot of these incumbent providers, and when we hear from citizens, a lot of times it's, "I'm unhappy with this provider. I need some options," and sometimes there's not options, and I think hopefully they'll have some more options. I look at our network as a selective access network down the road to where we're starting with an exclusive agreement with Inyo to deliver service, but hopefully we're able to expand and provide as much service offering to our residents as possible, so our relationship with incumbents is good, and we expect them to deliver great service. Just anecdotal, when we started proposing our fiber optic network, the plant was proposed to be copper in these areas, and now the plant is proposed to be fiber optics, but not only that, the investment was made to go back to our existing residential areas and build out their fiber optic network, so the incumbents actually stepped up and delivered fiber plant in our city, the city of Ontario, where neighboring cities didn't get that investment, and I realized there's only so much resources that can go around, and the investments need to be targeted, and we feel pretty fortunate to have good incumbents in our city, but again the bar is being raised, and we expect a lot out of not only our network, but the incumbent networks.

PAUL ROMERO: So up where we're at, the local incumbent, Verizon, actually hasn't been very cooperative in working with us. It's not that they're not willing to -- they're not blocking us from doing anything, but they haven't been willing to assist us with anything or to partner with us or really anything along those lines. We're also within the Frontier territory that was originally purchased from Verizon a few years back. Frontier, on the other hand, has actually been fairly good to work with. They've actually helped us to get service out to areas utilizing their copper network, where otherwise we wouldn't be able to provide service, so at least so far with Frontier we've been having much better luck. We're also looking forward to participating with Frontier or having them participate with us on the new KRRBI project. We think whereas we could also be seen as competitors to each other, in order for us to keep growing our region, we're gonna have to work together. There really isn't -- when you're as rural as we are, there needs to be multiple partnerships with really anybody. Anybody who's willing to partner with you, you need to be able -- whether they're your friend or your enemy, it doesn't really matter, but you have to partner with everyone, the counties, the cities, the local business owners. You have to contact everybody and talk to everybody. Granted for us to work with our local businesses, it's quite easy. Our local residents, we can have one, you know, open house meeting and pretty much everybody can come, because our community is so small. We don't have the same issues that a lot of the larger cities have as far as communicating with the public, so that's one plus for us. It's a little bit easier to gauge.

MICHAEL ORT: So you guys have growth plans, I mean, as you look forward. What do you guys see as the biggest challenge you have in terms of further development of your networks? And, secondly, what is your source of capital for your expansion? Is it internally funded? Is it, you know, how does that work for each of you? I mean, each of you have a

completely, you know, kind of urban, suburban, rural, and each of you have a different challenge, so how do you see that?

JORY WOLF: Well, in Santa Monica, our biggest challenge has always been assets. Had we had a power utility, this would have been very easy to do in a very quick period of time without a very large investment and would have been part of our normal business. So we had to start a new business, an enterprise, and we created an enterprise that started to generate revenue, and then we were able to create a fund, and that fund is actually now generating the resources that we need to continue to expand the network, and then also when we replaced our frame relay circuits and our leased circuits, we were able to maintain those savings over time. So we have an ongoing enterprise fund that allows us to continue to reinvest in technology for the community, and I'm not talking about just broadband technology, but the smart city initiatives and applications that come with broadband. Hold the light green for transit vehicles, pay on foot stations, video cameras for public safety, streaming video for police and fire vehicles, ubiquitous Wi-Fi throughout commercial corridors and in the neighborhoods of parks and schools, and many other applications that make Santa Monica more livable, more mobile, and actually help us drive well-being. So our biggest challenge is getting into the residential neighborhoods. The commercial sector has been very easy to penetrate, because we already have lots of assets there. We have traffic signal conduit. We have public works projects galore where we're resurfacing the streets and doing street landscaping, etc. Partnering with our folks in public works and in planning have helped tremendously, but the amount of that kind of work doesn't increase to any great extent within the neighborhoods, and so penetrating to the neighborhoods and providing residential services are a big challenge, but having the savings and having this ongoing revenue from the commercial sector is gonna allow us to get into our street lighting system and at the

same time to provide LED lighting within the city saving dollars again, leasing our assets for poles to wireless carriers to provide more revenue, and then using the conduit systems for our street lights to assist in getting fiber into the home.

MICHAEL ORT: Cool.

ELLIOTT ELLSWORTH: So we have initial funding, and I think the additional funding will come with success. The good news is Ontario's not going anywhere. We're gonna be around for a lot longer than I'm around, and I think we'll continue to expand that network out and really try to use it as an economic development tool. I love what Jory -- I think it's probably your city manager calls it the silver bullet, right, when they need to get somebody in town that's an important employer, lots of jobs, job creation, they leverage their silver bullet, and we want to be just like our big brother here in Santa Monica, and be around for a long time.

MICHAEL ORT: Paul.

PAUL ROMERO: So I think for the Yurok Tribe, as one of the largest Native American tribes in California -- we have approximately 5,000 enrolled members, but at the same time, we're also one of the poorest tribes in the state of California. We don't have a lot of gaming revenue. We don't have a lot of internal funding. Most of our operating capital for the tribal government comes from grants. Grants is pretty much what keeps the tribe running, you know, providing services to our tribal membership. We just don't have the money to put in to build this infrastructure. For us, we are solely reliant on government funding, government programs in order to, you know, like the Community Connect Program, the CASF Program. These are the only ways that, you know, we can continue to grow our network. Also just to operate our network, coming up in the future, we're gonna be reliant on programs like the Lifeline Program, the Universal Services Fund, E-Rate, working with the school districts. All of those government

programs are gonna be required in order for us to maintain operation of our network, because we are so rural. As we are with our wireless program, we can barely afford to keep it afloat. I have to, you know, steal and borrow and beg to keep our broadband service operational, and once we move into the fiber, if we can't find enough partners to at least start fiber from us, then it's gonna be really difficult for us to maintain an operational state, so you know, those are real fears that we are looking at down the barrel of the gun, and we're trying to figure out how to solve those.

MICHAEL ORT: Thank you. I'm gonna just ask you guys just to take one minute and just reflect on how you see this as a fundamental game changer for your community.

JORY WOLF: Well, in Santa Monica it really helps drive our economy, and Santa Monica used to be a sleepy little beach town. I think that was good. I used to live there. It's a little bit more crowded and congested than it used to be, but for economic development purposes our broadband network has provided exceptional tools for driving our economy, for bringing in a new tech economy, for attracting businesses, and of course, retaining existing businesses, for giving our UCLA Hospitals and Clinics probably the best technology that they can use, not only for our local community, but also for the world and contracts that they have the Navy on aircraft carriers for virtual medicine and the like, so our businesses are thriving because of this, but also our residents are thriving, because we've taken care of the digital divide. We have free Wi-Fi throughout most of the city, and we have robust networks for our schools and for our college. We are also now providing hold the light green traffic signal traffic signal priority, and a host of other applications for improvement in public safety, health, education, and welfare, and broadband was the foundation of all of that.

ELLIOTT ELLSWORTH: For us I think it's growth and economic development, and can we be a place that a business would locate to because they have that infrastructure. I think

what I'd love to see is that these are models for other communities, because at some point it's not gonna be economic development; it's gonna be this is ubiquitous and everybody should have this, and how does it get done? Do we need to have the tech guy in the office that can figure that out or can we just leverage the plan and make this work, just like we do with roads and water systems, and can this just be something that happens in the United States where we got this figured out and we're using each other's experiences to get better, and I'm hoping that that's what we can bring forward. Right now it's a silver bullet. It's an economic development tool, and we've had to take a leadership role to make it work out this way, but I think there's so much more, and we've heard a lot from a lot of different people about a vision and what we could be, and I hope that we learn some lessons and really embrace that in a lot of different organizations and communities.

MICHAEL ORT: So for the two of you, it's really about some changes in the community, but also is differentiating your community from the other communities around you. Paul, my sense is that yours is a little bit more fundamental than just getting some basic services in your community.

PAUL ROMERO: Yeah, for the Yurok Tribe it's -- I guess for starters we brought them the ability to communicate effectively real time. We brought the ability for the tribe to share its culture online. I mean, we changed the way that the tribal government works. The tribal government has a Facebook page. I mean, before the service was there, the tribal members, it was very hard and difficult for them to participate in a government level, so by bringing that access to them, we made it where now they can participate in the public process without having to figure out how to get from Weitchpec to Klamath, which is about a two hour drive from one of the reservations to the other, so it's -- the educational resources, the ability to participate in

government, the ability for some tribal members to have businesses for the first time where they can actually, you know, stay living on the reservation and sell their items online. It was very transformative to me to watch that process as we rolled out the broadband to the reservation. Some of the issues now, though, and the reason we're pushing for the fiber project is because at present we can only offer 3 megabits per second, so if they want to do, you know, like high definition television or anything that requires more bandwidth they can't right now, and for us to be able to pipe all of our council meetings down to the tribal membership, we need additional bandwidth. That 3 megabits per second just isn't gonna cut it if all the tribal members on the system all try to watch the video at the same time, it would overload our system, and everybody's Internet would go down, so it's just -- the transformation has started, and I want to see it continue, and I want the tribal membership to have all the same capabilities that everyone else has in the state of California.

MICHAEL ORT: Thank you. Why don't we take a minute or two for any questions. Are there any questions that anybody wants to ask the panelists? I know we're standing in front of lunch. No, no questions? So, Jory Wolf, thank you. Elliott Ellsworth, thank you. Paul Romero -- oh, there's a question.

AUDIENCE MEMBER: I was just curious if you could make a quick comment about community -- the board's community anchor institutions and the role for community anchor networks either as anchor tenants or --

PAUL ROMERO: If you don't mind me just answering that. So, the Yurok Tribe is the anchor tenant for the Yurok Tribe's broadband program. Without the Yurok Tribe there would be no broadband program. They pay approximately 80, well, probably closer to 70% of the cost for operating the system comes from the Yurok Tribe, because we have so many offices and so

many Internet connections that are required. So without the anchor institutions, it wouldn't even come close to being fundable. It just wouldn't work.

ELLIOTT ELLSWORTH: For us, we're gonna be a tenant on the network, but in terms of anchor, sometimes you carry the cost regardless, right? And I think we've modeled it to where we get some value, we get savings, we get better throughput, better bandwidth. Our city operations would be much more efficient, but I don't think we're prepared to just pay unlimited amounts for everybody to enjoy that. We're gonna model it to share the load equally, but yeah, we will be on the network.

JORY WOLF: Like I said, we did a survey before we got started, and we realized we had a whole lot of anchors, but in working with other cities and speaking to my counterparts, anchor institutions are extremely important in the decision to go forward. If you don't have enough anchors and you're not gonna be able to show politically that there's a need here and then affordably be able to sustain this thing because you don't have enough revenue, then it's not gonna work, and the anchor is extremely -- it's essential really in putting together the plan and getting political will.

MICHAEL ORT: Thanks guys. Please join me in a round of applause for our panel.

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