

Q & A

with Phillip Clark, PAXIO

PAXIO, which provides the fastest broadband in the US – some of its customers have gigabit access – has decided to pursue an open-access model for its fiber-to-the-home networks.

Phillip Clark is president and founder of PAXIO. He's built for speed. In 1997 he founded Symbio Internet Services, a company that provided high-speed data to apartments in Texas, the San Francisco Bay area and in Florida until 1999. He then ran FiberRide, which delivered fiber-to-the-home to developers. In a recent conversation with Broadband Properties Editor-in-Chief Steve Ross, he explained how PAXIO evolved from his experiences.

Clark: My philosophy has always been finding a way to take “Corporate America” technology and deliver it into residential homes. My guiding principle is that there's no reason people in homes can't have the same technology their company has. There's just no reason!

In 1997 we started working with apartment owners to deliver on this vision. By 2000, the challenge was how to deliver this solution to large master-planned communities with developers such as Irvine Company, Talega Associates and Mission Viejo Company. Our first single-family deployment was online by the end of 2000. These deployments required fiber.

In 2003, the parent company pretty

much ran out of money – or rather, we were more successful than they had planned. I went back to them with a projection for the year and said, “You know, if you put in another million for deployment, we'll have x thousand more homes,” but because they had a tightening in their core business (they were a low-voltage contractor, doing structural wiring in the home) they couldn't do it.

So that created a challenge, but it led me to PAXIO. I had kept our customers informed about what was happening, and some of the builders said they still wanted fiber. Pulte Homes jumped first.

I met with them and said, “The model is going to have to be different, but if you want it we can do it.”

BBP: Are you working with Pulte in California, or nationwide?

Clark: PAXIO's focus is just in California. California is pretty big, and there's a lot that can be done here without having to go elsewhere. We've done both single-families and MDUs for Pulte. They've now built some mid-rise buildings, about eight stories. And there have been some high-rises in San Francisco on the table.

BBP: And what was the original business model with them?

Clark: Initially our motto was “true broadband, true choice,” and we were providing the choice for data. We thought that phone would be nice, video would be nice, but in the end the underserved market was data. Especially in

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the Bay area, where the biggest demand is and where they get the most bang for the buck, you can build fiber to the community and deliver up to 100 Mbps or even 1 Gbps, and that is a selling advantage.

BBP: And content doesn't cost you anything.

Clark: Correct.

BBP: Why did you decide on fiber?

Clark: In 2000 we were looking at our first master-planned community, with about 4,000 homes. It was still single-fam-

ily detached, but the units were pretty close together. We were debating whether to use hardened Ethernet switches, but when we really looked at it, our decision was “fiber all the way in” – future-proofing it. If you build fiber to the curb and then something like Ethernet into the home, you have your point of failure out there on the curb and you’re limiting yourself. Better to spend \$1,500 doing it right than to spend \$1,000 and limit yourself. That extra \$500 buys you a lot more, and I had enough experience to know that component pricing would continue to drop – and it sure has. Give yourself the best infrastructure, because the physical stuff is the hardest stuff to replace.

BBP: What was your first development?

Clark: My first fiber-to-the-home project was Talavera, a Pulte Home project in Santa Clara. In 2001, we started working on Canyon Hills, a Pardee master-planned development in Southern California. Canyon Hills won the CENIC “Connected Community of the Year” award in 2003.

BBP: How long would it take to build out a development now in California? If someone says, “I’m going to build a master-planned community with a thousand units,” how long does it take to go from zero to a thousand?

Clark: Minimum three years, more likely five. A project here is typically anywhere from 100 to 200 units, and then a master plan is a grouping of projects, and in any one project the sales and construction in single-family can turn over anywhere between four and eight units a month, depending on how fast it is. The good steady-state number is from four to five single-family, detached homes a month. Multifamily or attached product is more like seven to 10.

BBP: What does this get PAXIO in terms of units passed, marketed, and connected?

Clark: We’ve passed 40,000 or more homes. Of that we market to a very small number – maybe 1,000 homes right now. And of those we have around 600 subscribers. Let me describe our network and how it works. We’re building from a regional fiber access point to a project and obviously connecting every home in the project. That means we’ve been building anywhere from half-mile to four-mile fiber legs to each of these projects. So in this mainly urban environment we’re in essence running down these streets and running fiber counts

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so we can connect all the other projects along the way. But we haven’t come back and begun marketing to any of those projects yet. We now have three projects live in Oakland. We’re in downtown Oakland and we run also to Jack London Square, which is being redeveloped. So right now there’s probably 1,500 to 2,000 homes there, but there are more due. It’s mostly brownfield redevelopment. In West Oakland, the current cluster we’re hitting is going to be about 600 homes but there are supposed to be about 3,000 being developed in that area. And near west Oakland, but not in the slum area, there’s a lot of mid-rise

development going in.

We’re also in Emeryville. There are college kids there but, more than anything else, it’s the young professionals who work in San Francisco. There’s a lot of business in Emeryville, too. It’s home to Pixar and to biotech guys, like Chiron.

BBP: I like your take rate!

Clark: We have about 5,000 other homes that we actually have connected to our fiber that we’re not aggressively marketing – we’re actually not marketing to them at all. We’ll start in the next couple of months, as we resolve some of our new open-access partnerships.

BBP: Can you talk about those partners?

Clark: We rolled into being open access from being a fiber monopoly because of the changes in offerings and content options over the last couple years. Also we took a hard look at our motto and our mission, and our mission has always been to bring in technology and bring competition to these communities.

At first it was just us being a superior data provider. But do we want to be the service provider for everything? Are we trying to be a new monopoly? And we said, no, we don’t want to. We actually want to deliver our vision. Let’s make the fiber do a lot of stuff and not worry about what we have to do. Let’s be inclusive.

Let’s be open access. Let’s bring people in. Because you know what? At the end of the day, everyone who’s not AT&T or Comcast are fine. We don’t need to be fighting with the other small guys out there. We need to be working together.

BBP: And now who are these small guys?

Clark: For video we’re working with Optical Entertainment Network (OEN).

We actually have another video guy in the Bay area we’re trying to get on board. We’ve talked to some of the bigger guys like EarthLink, but the challenge with the bigger guys is our foot-

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print. Their thought is: We like the idea, we can look to partner, but you have to get to x number of homes.

If we stay a monopoly we'll keep growing, we'll make our deals. If we go open access we reduce the barriers, allowing more and more people to partner with us.

BBP: When did you make the open-access decision? Did it come with the start of the company in 2003?

Clark: No, it came probably early last year. Since then we've been playing with the business model. Are the systems really in place? How do we do some of these services? How is it going to impact us, being open access? Do we say our current voice providers can stay white labels of PAXIO's, or they can split off and actually do it themselves?

BBP: What happens if you're only selling bandwidth? Someone could sign up for Verizon, or Vonage. What does it mean to partner for voice anyway?

Clark: We're managing those premises-end components. In partnership with Alpha we designed a universal battery backup solution for multiple devices that all plug into one battery backup. It's similar to the APC unit, but we've modified it to service different components that require different power inputs.

BBP: Isn't that aggressive for so few subscribers?

Clark: You have to really work on the vision. Also, we can save our partners money; ultimately they don't have to send anyone out to the customer to start the service – they just reprovision. They're saving anywhere from \$60 to \$100 per user. That's why they are willing to pay us for being a partner, even though someone could just get our bandwidth and use it.

BBP: Your VoIP competition is Best Buy, or Frye's.

Clark: Or Vonage, where you call them and they send a box out to you. But because we don't have any compacted upstream and there are no bottlenecks, we can allocate separate bandwidth for voice service for partners, so it never interferes with your Internet traffic or vice versa. The people who buy the box from Best Buy or Vonage must share the data bandwidth with voice.

BBP: Are you doing that as a Layer 3 solution with PacketFront, or are you doing it yourselves?

Clark: With PacketFront. Working with them has really helped sell me on open access. Their engineers are very open to hearing my ideas, hearing about new services and how we want to deploy things on the network, and then contributing resources to make it work.

BBP: What other suppliers do you have?

Clark: I mentioned Alpha for power supplies. And Corning. I worked with Corning when they first set up their Corning Connected Community program, and now they have a Corning Connected Provider program. We also have some regional subcontractors who do installations – one that deserves credit is HP Communications (no connection to Hewlett Packard).

BBP: Are you using an active network or GPON?

Clark: We're using active. You can always put a splitter at your node location if you want to go GPON.

BBP: Who's making your ONTs and OLTs?

Clark: We're using the PacketFront EP devices. So we're not doing any GPON right now, but that's something we will be doing as we start to explore municipal projects.

BBP: What happens when you start delivering video with OEN? California has a statewide franchise law. Would you bypass it by saying you're an IP service?

Clark: We're working with OEN's Fision service to get a statewide franchise. Ultimately it will probably be each video content provider's duty to obtain the correct franchise. While we know we can fight and say it's just data, we will always pay the franchise fee and include the city. We're going to go back to these cities that we've been operating in for quite a few years, and expand from specific developments. So we want to cooperate.

BBP: I understand you've got some customers subscribing to your 1 Gbps service. Who are these, Pixar engineers working from home?

Clark: Our first gigabit customer told me, "My wife thought we were buying the home for the countertops, but we bought it for the fiber." And I said, "what are you going to do with this?"

turns out that he is the IP manager of YouSendIt.com.

BBP: I use that for sending large files, and it works well.

Clark: It's a great company. We just signed a partnership with them.

BBP: Is he running it out of his home, or does he have a server farm somewhere else?

Clark: They have their servers in different data centers. But if he needs to do an OS update to his 200-plus servers, he needs a lot of bandwidth. And it's worth it for him to have that bandwidth at home. That way, if anything happens he can take care of it quickly without having to go anywhere.

Throughout the last year, we've seen him spike every so often as he tries out new Web sites and concepts. A few months ago he called and needed more IP addresses because one of his sites had been mentioned on a big-audience site and all of a sudden he was getting crushed. He had plenty of bandwidth, he just didn't have enough servers online at his home.

BBP: What are you charging him?

Clark: \$395 a month is the fee for 1 Gbps. By the way, he's only been able to get to 290 Mbps. That's the max he's been able to push. There are just not enough places he can push bandwidth to with the exception of his own private server banks. He has informed us that he is working on a multiserver session scheme to push a full 1 Gbps simultaneously. We have a second gigabit customer who is a software engineer. For him it's just the fun of having it and knowing that he'll use it from time to time, maybe sending stuff here and there, but he realizes that no one else has enough speed to compete with him.

BBP: How many customers are up at the 100 Mbps range?

Clark: About 4.

BBP: And what's the typical bandwidth your customers are signing up for?

Clark: Our basic service, which is 2

Mbps symmetric for \$26.50, and our value plan, 20 Mbps symmetric for \$48.50. Or, you can get 8 Mbps data and unlimited local and long-distance service for \$63.

BBP: Not bad! That's better than

Vonage on top of your data bandwidth, and you can manage it better. If someone puts a free rider like Vonage on, you don't give them any special management, I gather?

Clark: That's correct. If you have 20 Mbps it really doesn't matter – it's hard

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to push that much data. But for the people who have 2 Mbps, we've been contemplating offering them, for an extra fee, the ability to separate their voice and data traffic. They just provide a MAC address at their voice adapter and we separate the traffic, so they can use any VoIP service, not just our partners'.

BBP: Tell me about Metro Connect, your FTTH service based on AboveNet's Metro Ethernet network. It's used for connecting employees to the businesses they work for, but what kind of workers are using it?

Clark: We've tested it with a few customers who are finding ways to leverage the fiber. Any service provider can connect to us in any one of our data centers, and any homeowner connected to our network can get to businesses on that service provider's network at 400 Mbps. For those other providers it's a win-win.

It gives them another feather in their cap to sell to their existing business customers, and it's a real value to the homeowners. Right now the main users are in Emeryville. I used to think the customers would be people living in expensive suburbs, but the main users so far are these techies, the engineer guys who live a mile from their office and want access to it all the time. The concept is not fully understood. And that's where over the next year, with Corning and you guys and PacketFront, we can start helping people understand what this concept is and how it can be a paradigm shift.

The selling point to the property owners and the builders is how to get more value out of a resource that has so much inherent value. Do you want a closed network, or do you want to partner with a company that's going to continue to bring innovation and new ways for you to add value to your com-

munity? Metro Connect is that. In the near future it's for the people who want to telecommute at 100 Mbps. In the midterm you'll start to get businesses buying a business Metro Connect service so that anyone on the network can get to them at 100 Mbps.

BBP: Businesses don't just want the 100 Mbps connection; they also want the ability to configure, say, a VPN (virtual private network) that

home to the company network.

BBP: Do customers have to manage that, or is it done through your end?

Clark: They would have to approve the user and tell us. There's a pool of IP addresses that the company has said could be used for their employees. So when a homeowner is approved, their device gets one IP from that block. Instead of going anywhere else on the Internet, they go to their employer. That's easy with PacketFront, which can manage Layer 3 of the network logical stack all the way down to the edge of the network. That path gets individually routed across the entire network. No one can take that IP. Someone can't pretend they're that user, unless they happen to be in that user's home with that user's computer.

BBP: Is Metro Connect up and running?

Clark: It's there. Again, it hasn't been promoted much. We are still fine-tuning it. We're starting to grow it in Emeryville, where we have a more knowledgeable user base and we don't have to explain it to the layman. Corning and PacketFront are helping us, because the concept sells a lot more fiber.

BBP: Is Metro Connect PAXIO's, or is it a partnership with AboveNet?

Clark: It's totally ours. As we continue down the open-access road, some of the pieces will have to be spun out. But in their infancy we're kind of babysitting them.

BBP: Most of the providers we deal with depend on the triple play. They're looking at other kinds of plays as well – security services, telepresence, telemedicine, aging – with the idea of getting the average monthly revenue per customer up over \$100. Admittedly, providing

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doesn't cost an arm and a leg. Is Metro Connect offering that?

Clark: Yes. We have a huge number of flavors – ways to manage the connection from the office to the homeowner. You can do a standard VPN that goes through the company's Internet portal, but obviously at much higher speed, or you can provision IP addresses directly from the company pool that are directly routed to the home. So you have, in essence, your own private tunnel from the

raw data bandwidth is the lowest-cost service you can sell. You don't have to pay for content. But they want to reduce churn by bundling, to cut marketing cost, too. Do you guys have a different model?

Clark: All of these services are nice and we want them on the network, but let's bring in other people to innovate them. For security, are we going down the road with some different security people? Yes. Part of my vision for open access is making sure that every partner can be part of a bundled bill.

We've done work with cities and school districts, trying to connect all the school districts and then carry their content onto the networks. We're hoping to be live next summer – based on their schedule, you can't get approved till December and then we probably won't have a deployment date until the following summer.

BBP: Are you planning to move

outside the Bay area with this business model?

Clark: Yes, to Southern California. Each time I look at something farther out I say, if you spend those resources in the markets we're in, or elsewhere in California, there's a lot of opportunity.

BBP: Are you buying someone down there or are you building?

Clark: We're building. We've been working with several cities and one of them needs a fiber ring. They also have a need to connect schools and we've sold them on our vision of us being an open-access manager. We build the pieces that they can't build, but ultimately the whole thing becomes a kind of partnership.

BBP: In residential developments, do you have any feel for what kind of value you actually add to a developer's house for sale?

Clark: The developers' people say that if one in a hundred home buyers is mak-

ing a decision because of us, their commitment to us for the entire project is paid for. It doesn't even have to be the primary decision. In fact, they know it's not going to be. Location is the primary. But if it's one in a hundred that we are the reason, they keep on a little bit better pace selling the project, which matters a lot more now. If a project continues selling four units a month instead of three and a half because they have us there, they've made a huge profit by having us on site.

BBP: What does a commitment cost them? How do you structure the deals?

Clark: There are three main components. First, there's the fiber connection, which is getting the fiber from some regional access point to their project.

BBP: Do you try to have them cover the entire up-front cost of that build?

Clark: That's the goal, but it never hap-

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pens. Because we don't get paid up front and you have to pre-engineer it without knowing all the variables, ultimately it's always a good deal for the developers. And the more I find out how much Pacific Gas and Electric and AT&T charge for that connection, I don't grimace over what we ask for. I was in one meeting where AT&T wanted \$70,000 to deliver copper to the project. Our cost for getting the fiber there was \$30,000.

For the second part of the deal, we have a few different models. We have the connectivity live when someone moves in.

Finally, as we add more and more providers, we will have a provisioning portal. When customers plug in their computer they'll get right to the provisioning portal and pick the provider. What we tell every provider is, "Here's what we offer the builder; if you agree to these terms, you are one of the choices." We're still hammering out some of the details. Our Plug'n Play Broadband has been delivered since September 2006 and the results have been outstanding.

BBP: Are you paying for the inside wiring, or is that something the builder builds?

Clark: The inside wiring is paid for by the builder or developer.

BBP: What about brownfields?

Clark: The difference with brownfields is how deep the fiber goes in. We suggest putting fiber in each unit. Some projects want it to be just a point of entry within the building and then Cat5 distribution from there. If you have a mid-rise building and two distribution closets, and you know that every unit has to be less than 300 feet from a closet, it works. If you want to put the Cat5 in you save a lot of money with the electronics.

BBP: How do you leverage your symmetrical bandwidth right now?

Clark: One way is through partnerships for backups, allowing the full 100 Mbps for data backup. It gives you a remote recovery option. We're looking to partner with some of the Bay Area backup companies and get them connected directly onto the network. Then the ho-

meowner can back up an entire system with 100 Mbps. Remember, the area is earthquake-prone.

Gaming is obviously very interesting, too. We are looking to bring on a few gaming customers or gaming companies on our business side. We hope that providing them connectivity will open the door to show how we can leverage their content into our subscriber base.

BBP: Any advice for other people who want to do this elsewhere in the country?

Clark: Seek partnerships. For everyone who's not the large incumbent with billions of dollars, the issue is how to make a smart model. Our market is different in that our competitors have real products. There's never any thought of us getting RUS funding. There are some areas in California that are undeserved, but for the most part it's a well-served environment and our focus is on creating that market differentiator.

BBP: Do you see as competitors the CLECs and other service providers who pay for the whole network and make deals with MDU or PUD developers for exclusive access?

Clark: Well, yes and no. We are inclusive, so we are always looking to allow other providers onto our network to build value for our partners. Personally, I feel the exclusive arrangements that eliminate any possible competitors are not in the long-term interest of a community. In some cases, the developer may get everything sold before there is a problem, but if not, there could be huge losses. Developers need to decide what their goal is for a telecommunications partner. If that goal is to create significant value and long-term satisfaction, then they should look to provide the most dynamic telecommunications market available within their community. In California, that choice is simple – PAXIO! **BBP**

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