

Jeff: Welcome to Community and University where we talk about everything related to community and economic development. I'm your host, Jeff Franklin. I'm a research assistant at the Regional and Economic Innovation Center housed by the Center for Community and Economic Development at Michigan State University. I'm joined today by Mitchell Shapiro. Shapiro is an independent consultant specializing in telecommunication analysis. He's also an author of an REI-supported co-learning plan focused on bringing high speed fiber optic networks to rural areas in Michigan. How are you today, Mitchell?

Mitchell: Good. How are you doing?

Jeff: I'm very good. So your project, it talks about these rural energy cooperatives and how they are a leading force to address the challenge of low internet speeds in rural Michigan. Can you talk about what these co-ops are and how they go about solving this issue?

Mitchell: Well, the rural electric co-ops, they go back to the 1930s when utilities were a privately-owned, investor-owned utility companies who were investing in big cities, but not in the rural areas, cause they couldn't make enough money there. And finally the Roosevelt Administration in the 30s responds to the problem. There was like 10% electricity on the farms. They created a rural electricity administration, I can't remember. They've changed the name since then. They made low interest loans available to primarily farmer owned co-ops. Basically it was the farmers out there that didn't have electricity, they said, and they even actually installed some of it themselves and they've been providing electricity in these very, very rural areas for decades now. And these happen to be the areas where there's the lousiest broadband availability in the country, in the state as well. And they are starting to realize, well they've got poles in the air, they've got trucks, they've got expertise that they can deploy fiber optics, which is the, the gold standard in broadband and serve their members cause they're member owned. So it's a different model than having a Comcast or an AT&T that you have to rely on and it's working pretty well. So it's an exciting development.

Jeff: So why has it taken so long for high broadband speeds to reach rural areas when we take it for granted everywhere else?

Mitchell: Well, again, it comes down to the same problem that was in the 1930s with electricity, which is the private companies that focus on profit and return to shareholders can't make enough money. It's too expensive. It's basically, you know, the more rural it is, the lower the housing density, the more it costs per customer, the less profit and private investors aren't really interested in that. And that's the same thing today. Uh, there's other problems. The Federal Communication Commission as has the data relied on to decide where to subsidize investment and the data is lousy. Everyone who knows anything about this knows it's lousy, but it's been very difficult to get the FCC to do something different. That's starting to happen now. So that's an improvement. And there are other things, but I think now we're at a point where the pieces are coming together. There's enough successful co-op projects out there that they realizing this works. In fact, in Michigan, the Co-op, the electric co op that's been doing this the longest is actually doing quite well in its service area. So the economics work when

you're a nonprofit member-owned cooperative that already has poles, already has trucks, it already has billing systems, et cetera. So the model has been slow in developing and part of it is another problem is state and federal legislation is not friendly to any entity except the big incumbent telecom providers. And that's just a political reality where they've got the money and they lobby. And in Michigan the law is not so good. It's very difficult for municipalities. But as it turns out in Michigan, the law does not restrict electric co-ops. So again, I think this, the timing is finally coming together. All the pieces are saying, yeah, this works and the cops are starting to say it works for us too.

Jeff: Well you mentioned in your answer, um, you talked about the economic benefit of this. Um, and that was something in your paper when I was editing it that I really, it stood out to me cause it seemed like it was such a good economic benefit. Can you talk about that, the economic benefit of bringing broadband to these areas? Fast broadband?

Mitchell: Yeah. Well, the first thing I'd say is it's broad-based, no pun intended, benefits, right? You got benefits in health care, telehealth, they sometimes call it or telemedicine. That's a big thing in rural areas because they're closing down rural hospitals and people have to drive sometimes hundreds of miles to get healthcare. And this telehealth opportunity has been developing for really for decades. I wrote about it when I was in graduate school at MSU in the 80s, but there's lots of restrictions that were in place. Now it's getting easier and easier. It's getting better quality. The laws are becoming more friendly to doing that education. You might have heard of the phrase the homework gap. Sometimes kids get assigned homework that requires Internet access. And then there's small businesses, jobs. I found several studies. This one, a study by Purdue university found that every dollar invested in rural broadband returns four dollars to the economy. That's a pretty good investment. Four bucks for every dollar invested in that includes health care, education, economic development, workforce development, and farm income. Another study put out by USDA found huge, 47 billion, in potential annual benefits from the combination of broadband and what's called precision agriculture. So even if you're a farmer to do more than, you know, survive, to grow, you need broadband. And it's fascinating the kind of things you can do with high speed connectivity with drones and with measurements of the soil quality. So, there's just so many, you know, it covers really virtually everything going on because our economy is increasingly digitized. So, if you want to connect to that, you need... And you need reliable. There's a lot of data that shows that if you have unreliable broadband, especially if you're a business, it's not enough to help you. Because you know when you're, when your household, you know, if your kids can't watch Netflix, it's not the end of the world except maybe screaming at you. But if you're a business and you have to deliver something over the Internet and you can't deliver it, you might lose a customer. So reliability, and again, that's what the fiber optics that these rural electric co-ops are deploying is the state of the art in terms of speed and reliability and upgradability. So that's part of what's exciting about this is that's what they want to do because they're willing to invest over the long term. They'll invest and over 20 or even 30 years, that's their horizon. It's not like AT&T, which wants a payback on its investment in three years or five years at the most. So there's a lot of potential and it's starting to be explored. There's a lot of research on it. But it's very hard to measure all this stuff. It's just, you know, as any academic knows, you know, it's research ideas are one thing, but actually,

you know, doing a controlled, you know, having a rigorous study is difficult. But there's lots and lots of studies that the overwhelming message of all the researches, there was lots and lots of benefits. Speed and reliability are both important for that.

Jeff: It's funny, I mean the producer of this show, our wonderful producer, Heather Mahoney and we were just talking about... She lives in rural Michigan and she was telling... I was asking her about this project and I was like, "is it tough for you when you get home?" And the first thing she was like, "yes, watching Hulu and Netflix is almost impossible." So it's funny that that you mentioned kids screaming about their Netflix cause I guess that is a big problem for some, but going forward. Mitchell, when you were doing the research for this project, what were some surprises that you came upon?

Mitchell: Well, one was sort of a negative surprise, which was I did an analysis of this data, the FCC data and this data from Microsoft. The FCC data says where broadband is supposedly available. I can't get into the details here, but that's what they're supposedly measuring. Sure. The Microsoft data was measuring actual speeds of, you know, if, let's say you update your operating system or you know, all that stuff with you use operating Microsoft operating system. All this stuff happens kind of automatically in the background or you upgrade different things, software patches and stuffs, security. And what I found was, and I looked at the counties in Michigan by how rural they are and also whether they had a rural electric co-op serving at least part of the county. And when I found was that the rural electric co-ops are active in the counties with the lowest income, the highest unemployment, the lowest housing density, which makes it hard to deploy broadband. And not only did they have broadband availability a lot lower than the cities, the actual broadband usage that Microsoft measured was horribly low. You know, it was like sometimes 10 percent, 15 percent, 25 percent. So basically the message there is that the problem in these really rural areas where the co-ops are most active, the problem of broadband is much worse than the FCC data suggests that most of us believe. And your story about your colleague there is a good example. In fact, the head of Eric Frederick, the head of Connect Michigan, it's part of Connected Nation. He lives in a rural area outside of Charlotte. And he always mentions that he's basically got a T1 line, which is basically, I think it's, I can't even remember, I think it's like 1.5 megabits per second, which in the old days when I started my career was hot stuff. You know, that was the high speed Internet was 1.5 megabits per second, which is ridiculously slow now. And that's all he can get. And he pays a lot of money for it. So it's not only that it's bad, unreliable, slow, unreliable. It's also oftentimes expensive. So that's a killer combination, especially in low income areas. So, but anyway, to get to the good surprises, it seems like there's a growing realization in the state and particularly at the national level among both political parties, which is a good sign, that this has to be addressed. And though the Democrats, particularly some of the candidates, just in fact this week, two of the candidates, Pete Buttigieg and Elizabeth Warren announced just this huge amount of money that would go to things like co-ops or communities, basically nonprofits, they're saying, "we understand the only entities that really want to do this are community based nonprofits." And even Republicans are coming around to, "well maybe we can't get AT&T and Comcast to go there. We should, we should look to electric co ops." So I think, you know, part of my message of my presentation and the paper is that this is a good time for all the people who care about this in Michigan and

organizations that care about it to come together and get serious about what we can do about understanding where we need to do it and how we can best do it and have the parties come together, political parties and the various communities, economic development community, the tech types who are focused on, you know, the technology, the electric co-ops, cities, counties, and be prepared to leverage whatever federal funds are available to really get the job done this time.

Jeff: What will your presentation cover at the summit?

Mitchell: Well, I'll be talking about the things that we talked about here in more detail. Giving, you know, I'll be looking at the benefits. I'll be looking at sort of the challenge of why, as your question earlier, why it hasn't been done, and look more specific, more in more depth about what electric co-ops bring to the table and particularly what Michigan co-ops are starting to do, which I think is pretty exciting. A good chunk of the rural electric co-op community if you will, is starting to move in this area and doing pretty well. And then, I'll also look at a few things in other states because other states are doing some unique things that we can learn from other states and they can learn also of what's going on in Michigan. And then lastly, I'm gonna make some recommendations about how we can take advantage. I've been talking about this opportunity sort of how we can practically take advantage of the opportunity that I see. "We" being the state of Michigan and everyone who cares about basically bringing prosperity to areas that are struggling in the state, which are largely rural areas. There's a whole other urban issue that I don't cover in this low income urban areas. But right now, the beginning, the big expensive part of it is to... basically a path down towards universal broadband, high-speed, you know, high quality broadband in rural communities and also moving the direction of leveraging that broadband because... And that's where the development community comes in because that's... It's a tool that the development community can use and should learn to use and to kind of mesh sort of the technology issue that people who are talking about digital inclusion, the technologists and mesh that more with the development community and the local entities and the local stakeholders in those communities. And then as well, the politicians who write the checks and control a lot of things that... I think it's a real opportunity for the state. And so I'll just be fleshing out what we discussed in more detail, and the other part of it is I want to hear from attendees what they think. I would love to get feedback and though I'd prefer to hear from people saying, "this is a great idea. Let's go with it." But I'm happy to hear, well, "you forgot about this," or "you don't understand this," or "how about this? I think this is better." You know, this is a co-learning plan. So I would like to co-learn. Yeah, I've been learning here doing the research. I'm going to share that learning, and I want to learn from the people who care about this, who are attending and tell me how we can improve on or change whatever I come up with and build some momentum after that.

Jeff: So for those listening, um, Mitchell's talking about his presentation, that'll be coming up at the upcoming Innovate Michigan! Summit. The Innovate Michigan! Summit will be held at the Kellogg Hotel and Conference Center in East Lansing on Michigan State University's campus. You can register for the event at Reicenter.org. There will be a boxed lunch, a small breakfast made available to those who register and there will also be a reception after the fact. So Mitchell, as well as all of our other co-learning learning plan authors, will be presenting at this summit. So we hope to see you there. All right,

Mitchell, so after this summit, what do you want to do with this project? What are the next steps?

Mitchell: Well, I again, I'd like to find a way... I'd like to find the people who see value in this direction and want to guide it and that could be, you know, the co-ops themselves, communities, you know, counties, city community leaders, economic development people, the political leaders. I'll mention one person just because I'm aware of his background. The lieutenant governor of the state is very interested in this issue and he has a background in digital technology. He's a young guy, he's very digitally savvy and I would love to see the Whitmer administration work with the legislature to kind of step on the gas a bit more and have a better sense of where to steer the steering wheel. I think, you know, in Michigan things have been... Sort of, again, it's been sort of like one foot on the gas, one foot on the brake. The political parties have been at odds kind of not wanting to cooperate. And I think that's more possible now with a Democratic administration because now you've got two parties that both want to move in this direction and to move forward, they're going to have to come up... They're going to have to share the best of both of their ideas and get everyone else who knows something helpful to be involved. So that's how I'm going to do that. I'm not sure. There's other efforts. I worked with MSU in another, in a telecom focused, the Quello Center is the name of the office that I worked with. They're doing some things with merit network, which runs a fiber optic network that connects all the universities in the state. And all the universities are obvious, have obvious research resources, they have technical resources, they have research resources. So I'm going to try and find a way to find allies to move this agenda or some improved version of it after the summit forward. And I look forward to it. I think it's a good time for Michigan to step up and get broadband throughout the state and make good use of it.

Jeff: Thank you so much, Mitchel, for coming in. This was an excellent conversation. Unfortunately, we're running out of time, so thank you so much for coming and thank you all to listen for listening to this edition of Community University. Thank you.

Mitchell: Thank you.