In partnership

Report launch: Financing mechanisms for locally-owned internet infrastructure
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Jochai Ben-Avie
My name is Jochai Ben-Avie. I am the co founder and CEO of Connect Humanity. We are a nonprofit fund accelerating digital equity, and provide underserved communities with the access to capital and knowledge they need to build their own infrastructure and take control of their digital futures.

So I want to thank our partners at the Internet Society, the Association for Progressive Communications, and Connectivity Capital, who made this report happen, and to the folks out there who are on the front lines, connecting unconnected communities, providing reliable affordable Internet, and particularly thrilled to have Chris and Bruce and Shaun with us today to share more about their work which features in this report.

In 2020, you know, the pandemic, I think, really moved digital equity up the agenda and galvanized efforts to close the digital divide. This is something the authors of this report, and this report is something I've been working on for some time, but I think that the pandemic really brought this to the fore in a new way. And while money is clearly critical, I think many of us felt that there was not enough discussion about, not just how we need more money be directed toward this problem, but how we need to use that money differently.

After all, depending on whose numbers you believe, a third to a half of humanity is currently unconnected to the Internet. And the second half of humanity will not be connected in the same way as the first, which is to say largely by large incumbent telecommunications companies. While these firms have connected billions of people, they are meeting their limits. It is simply not in their business model to invest in low income communities, often rural and remote communities. that make up the majority of those still offline today. I think these communities demand that we do things differently, and we commissioned this report to help change that conversation. I can make you really, really believe that these incumbent operators have not, will not, solve this problem, which is why we focus on investing in community connectivity providers. The group of community networks, municipal networks, social enterprises, cooperatives, who are continuously proving themselves to be sustainable, and getting the job done, or others have left these communities behind or redline them. And, this report provides guidance, not only on the range of sort of owner operator models of what a community connectivity provider can look like, but also on innovative financing solutions. Because after all, well, many connectivity providers are getting the job done in community after community around the world. Many struggle with access to capital and our goal with this report is to help catalyze funding for these Internet providers that can connect all communities so that everyone has the connectivity they need to participate in our digitalising worlds. So I'm really excited to dive in.

I'm going to hand over now to Ben Matranga from Connectivity Capital, which led on the report, to give an overview of what's inside. Thank you.

Ben Matranga
Thank you very much. Okay, and thank you, everyone, for joining. Thank you. We know several folks around the world are on the call. I know it got a ping this morning on WhatsApp from Brian in Malawi who's on as well, so it is truly an international gathering. So thank you all for joining us.

My name is Ben Matranga. I'm managing partner at Connectivity Capital, and alongside my co-founder, Jim Forrester. We're excited to be here, this has been an ongoing journey for us. And, frankly, we're still in the first inning. You know, our goal as sector specific impact investors has always been twofold. First, it's to be investors to place capital in last mile connectivity providers, in CCPs. But, more importantly, to create the category of connectivity as impact investors. We believe that it is distinct, it is new. And part of that effort is broadening the tent, and really seeing just the spectrum of options out there. And one of the joys that we found in writing this report is getting to go deep on a Muni network in Idaho, getting to look at an amazing rollout of operations in South Africa. All of these operations have a lot of similarities. And when you get to pick those apart, there's a lot of power and learning from that, and be able to scale up.

So, in terms of how the report comes together, our goal has really been to demystify. We hope as you read it, you nod your head a lot. You look at the material, you say, Wow, that seems obvious. Because, at the end of the day, the model of running a CCP is actually quite simple. There's only a few dials that you can turn, you're essentially buying wholesale, selling retail. Sounds simple, but it's not easy. And that journey of doing that is... takes on many forms, given different environmental factors, given the operating environment that you're in. So, we hope that you could take that material and be able to put it into work.

Now, we want to thank our partners at APC, Internet Society, and Connect Humanity. For the longest time we had been consumers of their products, for many years. Certainly all of the amazing work that those organizations have done around governance, around technical training, around ecosystem development, around Internet exchange points, peering, the importance of peering. We often say financing is about the fourth act in a play. And all of that previous work is out there. It's amazing. We hope everyone kind of consumes it and gets a lot out of it. What we try to do in this report is explain some of those other acts of the play, simplify them, and understand how that then contributes to financing. Financing really is dependent upon the choice of owner operator structure, what you can do in terms of bending the cost curve, and how you operate, and being able to optimize for the end point that you want for your clients.

So with that, we'll jump into the initial slide in the report.

The first thing I think is critical for us is target audiences. You know, certainly there is something for operators themselves, for investors, and also for government policymakers. We want operators to be able to speak a common language to reduce that friction. Frankly, the term that we always use is, we want operators to play offense. We want them to feel empowered by how their network works. By the, not only the rhetoric that funding sources use, but why do they care about certain things? What is financial sustainability? What does it mean to be cash flow positive? It's not only kind of an accounting term, right, that your cash inflows are greater than your outflows. But it's also a way of how you seek to grow the network, right? What are your retained earnings to keep contributing to the network? How does that contribute to the capex over time?

So, we hope some of this gives them the offense to the investor side. A lot of that is about what should you focus on? You know, it will change in different stages of the lifecycle of a different entity, and we hope that when investors look at CCPs, they can identify what stage of the operation they're in, what set of tools are the predominant funding tools, and they can get to a place where they're actually looking to transact on a on a much faster basis. And then, lastly, for government policymakers, is a broad way of looking at the sector and the understanding that all of those inputs, your cost of backhaul, you being able to source the equipment that you need, etc, all play a tremendously important role in being able to operate.

With that. Let me pass it over to my colleague and the primary author, Anoop Nagendra, who will take it from here.

Anoop Nagendra
Thank you, Ben. Welcome, everyone. My name is Anoop Nagendra, I worked closely with amazing authors and just operators to make this content come alive, and what we're trying to do today is recap some of the major report highlights.

We're going to start with actually what are CCPs? Jochai provided a broad definition, and it is that it is deliberately broad, and big tent, and it refers to that spectrum, sort of an umbrella, of operators that are non-traditional and non-incumbent. What that means is they do kind of prioritize local ownership, and they're sort of somehow accountable to their social or developmental mission. We categorize it for the sake of narrowing it down for this report. We categorize them by the owner type to essentially three different types, and one is community owned. So, you're probably familiar with the broad terminology that ISOC and APC have been using for many years now, which is community networks. But we're actually extending the CCP definition beyond that. So they'd also include publicly owned networks like Muni networks, which are increasingly common in the United States, and we're hoping more so in developing markets. And then, also, there's a big broad tent of private operators that do care about social purpose, and kind of that segment of operators we refer to as social enterprises. Again, the emphasis is here to retain value within the local community, and to deliver broadband to primarily underserved, urban, rural or remote communities.

I want to talk about three big takeaways today and dive into the first one straightaway, which is that CCPs that leverage community assets and resources to lower the cost of their development have a higher chance to actually be sustainable. The big lever for financial sustainability is the ability to decrease or avoid your cost, your major costs. If you look at the center of the slide here, we've broken up what major cost categories are for any network operator to, essentially on the front end, kind of your upfront capex, all of the hardware that goes into building the network. And then on the, you know, recurring operational side, you do have labor costs, which is a big chunk of it, you have your backhaul costs. You have licensing spectrum fees, if you're choosing to go on a regulated spectrum, and then you have, you know, power and utility costs and probably some rental lease cost. Now these four or five levers are really the same regardless of any type of operator.

The unique advantage that CCPs have is an ability to either avoid or decrease one or many of these cap cost categories. How they do that is essentially by engaging local stakeholders, by leveraging community resources and community assets. What does that look like practically? Well, we'll see a lot of examples of that from our three guest speakers today. But in many cases, it's either donations in the form of volunteer labor or free backhaul or subsidized backhaul, or donated equipment or low cost equipment that's open source. And in the case of municipal networks, it looks like building out on street furniture that the city or the municipality has access to. In many cases it just implies simply using unlicensed spectrum or benefiting from members of the community that grant access to their property as right of way. There are many different forms this can take depending on local context, and we're hopeful that the report illustrates many of them.

The second one is that the capital structure and funding mechanisms really change based on both stage and the choice of owner operator model. When we say stage, it's essentially financial feasibility. And you cover your cost base. Are you at an operating loss. at break even, or are you cashflow positive? That really changes the different mechanisms you have access to.

On the ownership side? There's two types really, there's the ownership by type. So, there's community networks, municipal or social enterprise, which one are you kind of automatically gravitates you to a specific direction, and there's ownership by legal structure. So, if you're registered as a co op, if you're registered as a company, if you're registered as, you know, a community benefit society, that has a unique implication also to the kind of finance you can attract.

On the operating model side. It really depends on which stack of the network architecture you decide to participate in. So are you building only the physical layer of the network? Are you involved in the active deployment? Are you involved in customer service? All of that also has an impact on operational complexity and capital availability.

We're also seeing what are called mezzo organizations develop, and we're excited about this - where a community network has essentially grown to the point where they're helping other community networks seed, and Zenzeleni is a perfect example of this.

So, we'll explore how stage and structure really affect availability. But you can see on this slide also, that different types of CCPs have access to different types of financial investors. Third pathway is really about the spectrum of financing options. Financing CCPs is really a pathway from really high risk initially to a long term yield. In sort of the long term. operators need to evaluate the trade offs between different kinds of financing specifically, they need to look at the rate of growth that is required from them to justify an investment from a financial investor. This report is really focused on moving beyond that grant supported bucket, that you can see labeled A, so it's trying to get past classic philanthropy, which is focused on complete capital loss or even partial capital preservation, to this new paradigm of impact investing which is about concessionary returns. And eventually, our goal is to migrate some or all of CCP operators to be able to access the large buckets of traditional financing. We know that's a long journey and we know that maybe not everyone will get there. And in the interim, this report is really focused on matching financing sources with appropriate projects that are likely to have access to long term sustained funding.

We will talk more about... you will see why we're passionate about allocating more capital to CCPs. But I will highlight that they primarily operate in unserved and underserved communities. They're very deliberate in their intention of addressing market failures or opening up new markets. And they've demonstrated sort of viable alternative and low cost strategies to be able to connect people that have been so far unconnected. Importantly, they do keep profits local and retain value within the community, create local employment, and support local self-reliance.

With that, I do want to talk about the different panels we have today. These are structured in the way the report is structured. So, they should give you a glimpse into a different section of the report. And we have a wonderful set of speakers today. And to kick this discussion off, I will pass it on to Jane Coffin and Bruce Patterson. Over to you, Jane, to talk about the role and development of CCPs.

Jane Coffin

Thank you Anoop and Ben, and welcome everyone. It's a pleasure to be here and an even greater pleasure to introduce Bruce Patterson to you. We're going to talk about why CCPs are uniquely suitable for connecting underserved communities. And Bruce has great experience with this. He is a recognized thought leader behind the Ammon Idaho model, which includes automated open access, and a business model that mitigates risk for cities and creates local network ownership of infrastructure that is treated as a true public utility.

For 15 years, Bruce was the technology director at the city of Ammon, and was responsible for network planning, design, construction, and network operations. Bruce is widely recognized as the key influencer at the city for the project's success. I know Bruce knows a lot about construction, too. And Bruce is currently the director of EntryPoint solution services, overseeing all consulting projects, including network planning, feasibility analysis, network design, cost projections, and much more. And I will simply also say we work very closely with Bruce, and he's a pleasure to work with as both an expert and a human being.

So, I'm going to give you a little bit of an overview of why we know that CCPs are uniquely suitable for connecting underserved and unserved communities, and then Bruce and I are going to have a Q & A, and it's really the part that I want to get to quickly.

So, I'm going to leave you with three things to think about. The financial feasibility of CCPs are largely determined by the degree to which they can avoid or decrease costs of building and operating a network, Anoop and Ben gave you a high level overview for that. And, CCPs also engage local stakeholders and leverage the community resources to lower the cost of deployment and have a higher chance of sustainability. Many of us have seen this as we've worked with local communities. I also will say it's the human nets that build the net nets, and then it's a local local issue, where you really need that local sustainability. And many here today have been working on CCPs, community nets, Muni nets, around the world, and know how important it is to have that local buy- in. CCPs also must have an enabling regulatory and policy environment, particularly in certain countries where there are less developed regulatory and policy markets. Some have a better chance of making it when there's less stringent rules in place, but it's also an important thing that you've got to work with your community, whether it's the local government, the local tribal community, or others, so that you've got local buy- in.

So, I'm going to get right to it, here with Bruce.

Bruce, the first question I have for you is a two part question. So, what is the place of public broadband infrastructure in the connectivity ecosystem? And what was the goal when you were starting the Ammon Idaho fiber network? Over to you.

Bruce Patterson

Thank you, Jane. Appreciate that. I feel like you softened me up with that very kind introduction, but then you asked me a really hard question. And you realize it's about 8 am here, so let me see how I can do. Let's start with the first one. Let's start with what's the place of public broadband infrastructure in the connectivity ecosystem? That's a very challenging question. And I think we're trying to figure that out in local areas. Many local cities, counties, we're working with a number of them, are trying to figure that out, what is their place? I would say this, from our perspective, the place is for that public owner to be the neutral host of the infrastructure, and open up that infrastructure and apply public financing mechanisms to the infrastructure. We feel like that provides some benefit to the end consumer, both in cost and in trying to drive access to everyone making it affordable to everyone. We feel like those are key things that we're trying to deal with.

Now, as we, as Jochai pointed out at the beginning, go to the places that are currently unserved and are going to be more challenging, one of the key things that we can do, by doing that, is we can start to treat this infrastructure as a 50 year investment compared to a shorter term investment. We know that, with the advent of fiber and some of the investments we're making, there are a lot higher costs. We're digging in the ground, we're installing cables, we're trying to make it more resilient, to try to avoid things that are subject to weather or fire, and make it more resilient, so the costs are higher. So, it makes much more sense to spread out that amortization and the way we pay it back over longer time periods, and treat it more like we treat our projects to construct power facilities, electric facilities, or water or sewer. And it's been an unique experience to work with financial partners to try and shift their perspective, to get them to see it that way. Because they work with some of the traditional operators, particularly like wireless operators and so forth. The cycles are much, much shorter, the risks are higher, and so they do want to compress the timeframe and make shorter term loans, higher yields. But we do have to work at proving that this infrastructure is 50 year infrastructure, which means we need to build it a little bit differently than we might have traditionally.

In Ammon that meant for us we applied more of a data center type of architecture to it rather than just a single ISP architecture, and that allowed us to do a bunch of different things on the infrastructure. That actually helped us to push down the cost for the consumer for Internet, because it's supporting their public safety city functions, educational functions, and so forth, that contribute to the operation and the amortization of the network.

So, fundamentally, that's what I would say. And that was the goal when we started the Ammons network, was to prove that it was a good long term investment. So, that was actually one of the goals we had. And I feel like we've made some progress at that. But, there's a lot of work to be done in public policy, and a lot of work to be done in this area that you're focused on, with the financial partners, and so we're really encouraged by this report.

Jane Coffin
Thank you very much, Bruce. I really appreciate the fact that you drew the distinction between the data center infrastructure type model, I think that's important for some colleagues and other countries to think about, sort of a different structural modeling, and how that might work with

different services. So, Bruce, another question for you. What were the critical competitive advantages in building out the Ammon Muni network? And I'm going to speak slowly, because I've seen in the chat that there are colleagues who would like us to slow down a little, not you and me necessarily, but just to be mindful of that. So, what were the critical competitive advantages in building up the Ammon muni network? And, how were you able to come in at a cost much lower than other networks, that cost component that's so important for build out?

Bruce Patterson
There were a couple of things we did, I think. I'd focus on the first and most important one, which was separating the infrastructure from the services. Historically, as we build out this infrastructure, the service was bundled with it. But truthfully, if we build the right infrastructure, we can support a number of services. I alluded to that previously.

And so the key aspects I feel like we were successful at doing at Ammon that was a lot of hard work, truthfully, was to create a true free and open digital marketplace for services. That really required unbundling technically the infrastructure from the services, but also economically, meaning that each of the partners, each of the providers that play a role in the ecosystem, actually get their cost support, for whatever they're delivering to the ecosystem, separately. So, it isn't a matter of one partner paying another partner, every partner. So, the city gets paid directly for the infrastructure. That allowed us to unbundle and separate the service costs, which allowed a true marketplace, where they actually competed with each other, rather than worrying about what the price was for the incumbent operator in the area. So, that, I feel like, was a really critical aspect. It's the only way you can really get out of that cartel style pricing that tends to result when you're doing facilities competition. So, that was one aspect that really was a competitive advantage.

The other thing is that, uh, the city of Ammon was already doing utility services, and we had frameworks that we could apply towards the build out of the infrastructure. And so, we very carefully applied those frameworks to the infrastructure only, not to the service. That allowed us to use some mechanisms to create a project, finance a project and execute on it, using a public bond process, which is significantly different than a commercial loan that an enterprise or a commercial entity would take on. And so, I think, that helped us to push down the monthly cost the consumer actually pays. That was a competitive thing.

And we'll talk about this I think a little bit more when we get into the LID process, but the other thing we did was we actually identified the take rate up front. It's really common for operators, that's one of the biggest challenges, is if you pass 10 homes, if only five connect, that's a different economic model than if three connect, seven connect. So, what we did was, we went out and did a pre-signup, basically effectively figured out what the take rate was. That allowed us to do all of our financial modeling, know what our minimum take rate would be, and model onto that. And that's really effectively what a lot of the operators do, even commercially. As we did that, what we found is, our initial take rate was actually 50% for most all of the projects we've executed on. Which is very, very high, and that allows you to take that risk out of the curve as it were. So, that was very, very helpful for us.

Jane Coffin
Thank you very much, Bruce, and I think for a lot of folks in other countries that take rate aspect is really critical. As Bruce is saying, it helps de-risk some of the project build, and the local governance modeling, there's more, um, faith in how the project might move forward. And that's important with that trust building at the governance level, with local partners. Question number three for you, Bruce, what is a Local Improvement District? Some folks on the call here from around the planet may not know, and what was the financial innovation pursued by the Ammon model?

Bruce Patterson
One of the things that's very interesting is, you talk to the general public, and sometimes when you want to talk to somebody that's in the financial markets, don't clearly understand, for a public entity within the U.S., they can't just go out and sign a loan, for example, on an automobile for five years, they are precluded by law from doing that. They either buy it upfront, or they engage in what would be a government approved lease. Which ties back to an annual appropriation, meaning that the elected board for any public entity has an annual budget, they vote and they approve it. It's a very public process. Therefore, engaging in loans that are a five year or 10 year, they don't fall within that ability to approve the payments annually. They can't do that. So, it's really important to understand that public entities within the US have very strict rules about how they borrow money, which is why we have things like public leases, and we have things like public bonds. It's the mechanisms that they use to authorize long term amortization and kind of give a financial lender, or an investor, comfort that they're going to receive their payments on a regular basis and recover the capital they need to at the interest rate they're asking for. So, you have to use those frameworks.

So, a LID is one of those tools in the toolbox a public entity can use in Idaho now. Most all states have a similar tool. They might not call it Local Improvement District. They might call it a special assessment district, or an assessment district, or something along those lines, but they really all work the same. The idea is, the public entity, through a very public process, creates a separate legal entity. It has the authority to create a project and borrow money to execute on the project. In other words, build the infrastructure out, whatever that is. At the end, they close the project, look at what has been spent, and through legal mechanisms they have a way to go back to everybody that benefits from that project, and apply an assessment to their property. Because it should benefit their property and, in fact, increase their property value. That's the kind of the rationale behind it. That's what a local improvement district is. Ammon used it because it was the clearest and simplest tool to achieve the financing mechanisms that were necessary. In Idaho, and in most other states, there's an option to run them as an opt in or an opt out. Meaning that a property owner that's within the area, to receive the benefit can say I want it or no I don't. So, Amman ran, continues to run, all of its fiber improvements as optional improvement districts. We announce to the neighborhoods we're going to build fiber and that it's viable when we achieve a certain take rate. Then collect or aggregate that demand until we hit the take rate that's necessary to make it economically viable. Then we execute on the project, move forward. And then, at the conclusion of the project, we get a long term municipal bond.

I keep saying Ammon, I was there 17 years. I'm actually at EntryPoint, been here for a year now, and we're happy. We're helping to implement similar models for counties and cities across the US.

Jane Coffin
Thank you very much, Bruce, for that answer. And it's really helpful for folks to also know that there's a case study in the report about the Amman Idaho model, where Anoop and Ben and others have done a great interview and boiled it down into a case study. So, you can see in the report toward the end in the annex, there's these great case studies that the team has put together.

Bruce, one more question. We have about two minutes left in this segment. So, my final question for you is, how do we encourage more municipal networks, or known as Munis in the United States, especially in the context of emerging markets, so that municipal model that you were so instrumental in, in Ammon, Idaho?

Bruce Patterson
Excellent question. I think I'm going to divide it into two quick answers. In the US. I don't know that the Munis need any more encouragement, what they need is partners, partners that understand their ability to borrow money, how they do it, and partners that they're willing to look at the risks associated with the infrastructure, and start to work with the community to make it a 50 year investment. So, they're comfortable with longer terms on the amortization, lower yields. The backstop is commonly the value of the municipality that it has in its bank, or it could be revenue that the municipality receives through its regular processes, or it could be the property values, to backstop it. Like in the case of an LID, it's actually the property value that backstops the loan. For those in emerging markets, I would say this. It makes the most sense to use very public financing mechanisms. Because, if we're about the public good, we need to push down the cost, the monthly cost, to the end user. And, in order to do that, and get access everywhere, make it affordable, we've got to think about those high costs that are associated with building these things, and use the best possible financing mechanisms, which are typically LID projects.

Jane Coffin
Thank you very much, Bruce, and we're wrapping up this session. If you've just joined us, this was a session on why CCPs, or community connectivity providers, are uniquely suitable for connecting underserved communities, and we've just had an excellent q&a with our colleague Bruce Patterson from EntryPoint, who is instrumental in building out an open access model network in Ammon Idaho. The case study is at the back of the report, and I believe our colleague Callum has popped a link to that case study in the chat. It is now my great honor and pleasure to introduce Carlos Rey-Moreno to you, and turn it over to the next section of the report. Carlos, I'm turning it over to you.

Carlos Rey-Moreno
Thank you. Thank you very much, Jane. And I'm Thank you very much everyone. Actually, when we started thinking about this, this report and planning this report, I think, you know, seeing this launch is a dream, and the quality of the report, and the depth of the case studies, and all the lessons that we've learned through the process. And then, you know, like how the case studies have been documented and presented. So, yeah, with that, I want to kick this part of the launch, that is on the section of ownership and operating models. This section actually dives into the various parameters and trade-offs that operators consider when deciding on the ownership structure, the legal entity, and their operating models. And one of the early decisions that a network needs to make is regarding its ownership structure and operating model, right? And that choice has a major impact into the concentration of ownership, into the regulatory requirements, into the tax implications, into the operational complexity, and ease of fundraising, among many other factors right? So, this section actually analyzes a framework of different operating models, along with the various participation in the network architecture. It provides different examples of CCPs that fit within each of those categories of the framework.

Shaun Pather
With me, discussing in this section, I have Shaun Pather. Shaun Pather is Professor and Chair of the Department of Information System in the Faculty of Economic Management Sciences at the University of the Western Cape. He is an ICT for development expert, a National Research Foundation rated researcher who focuses on information society issues. Besides that, Shaun has been involved in both research and real world interventions which seek to minimize digital inequality, including through delivering broadband solutions to marginalized communities. He has been involved in national and international advocacy for grassroots based solutions to address the challenges of the rural digital divide. Besides that, Shaun is the chairperson of the board of Zenzeleni networks, non for profit company.

Welcome. Welcome, Shaun. And thank you very much for joining us. So, maybe...

Shaun Pather
That was an exceptionally long introduction.

Carlos Rey-Moreno
Apologies for that. But, without further ado, can you maybe go and tell us a bit about how Zenzeleni balances the tension between its social objectives and its financial sustainability, maybe telling us a bit more about what Zenzeleni is and does? Thank you.

Shaun Pather
Thanks Carlos. I think, first and foremost, it's important to understand the trajectory of Zenzeleni, because currently Zenzeleni is registered as a not for profit company, and its roots actually come out of research, which Carlos is very well associated with, around 2012/13 action research. So, it has a long history of founding itself in the community. And through the initial research, there was continuous experimentation with financial, technical, and legal options, over a few more years,

until in 2017 when a broadband network was first developed, with funding, through project funding. And, with that, was the founding of the not for profit company Zenzeleni not for profit, which comprises its various founding members of different expertise, including the University of the Western Cape, APC Regulatory, EllipsisRegulatory, etc. And in its founding documents, the company has very strong social objectives. And those social objectives are beyond just providing affordable connectivity, which is there, but it's about providing affordable connectivity that brings meaning to the lives of people. And so, I think the company finds itself deeply rooted with those objectives.

Tension. of course, comes about, then, in terms of how do we actually, or what was the difficulties in in bringing ourselves to financial sustainability, yet matching those social objectives? The reality is, the communities that Zenzeleni serves, in South Africa and the Eastern Cape, are people who live essentially, I forget the USD conversion, but with just a few hundred Rands, and their levels of affordability are very low. So, Zenzeleni, as a not for profit company, has had a tension of trying to provide service to these people. Yet, we've only been able to rely on project funding. And so, some of the project funding initially allowed for some construction of the network and network services. But, by and large, the problem Zenzeleni has experienced, and which is well documented in the report that's being launched today, is that that reliance on project funding has not enabled the organization to focus on the core business.

So, the one thing I think we realize, Carlos, is that somehow we've got to separate the mandates. We've got to focus on getting the network business, so that we can grow the network to a state of being able to derive an income that's enough to provide affordable services in the cross-subsidization way to poor people. So, it is a tension between having social objectives and providing affordable connectivity. But, over our years of experience, I think we finally have some kind of understanding of what the way forward might be to address it. But, in summary, I think that the reliance on project funding to undertake project activities, on its own will not allow us to to achieve our mandate and social objectives.

Carlos Rey-Moreno
Maybe just to add to that, Rand to US dollar conversion, I mean people in the rural areas Zenzeleni is providing services lives below $1 a day, so actually providing affordable services while being financially sustainable, in places that have been deemed unprofitable for many, is indeed a challenge.

And, Shaun, another question for you. Since Zenzeleni has chosen different organizational structures through the years, and now operates as a sort of mezzo organization, can you explain a bit more the different tiers of the Zenzeleni model? And, how can those community networks within that model, have a scale, or what we have learned. or what Zenzeleni has learned, about the scalability of those community networks?

Shaun Pather
Yeah, thanks, Carlos. So, I think, when Zenzeleni started, the idea was to found a community, in a very strongly oriented community based ownership, with the idea that the community would take far more responsibility than we understand it is able to now. So, over the years, from having this very strong ethos of having a community, and in the Zenzeleni example, it was a model of cooperatives that was formed, to take local ownership. And, in our case, the cooperatives are actually the ones who carry the license, from the regulator, to run and operate the network. But, I think, what we've learned over time is that rather, and we also, I think, at the outset, envisaged that as time moved on, in a kind of traditional incubation scenario, that you'd be able to release the local community to take care and manage as much as possible of the local network, not just the local network, but of the ecosystem that goes around it to ensure effective use. I think what we've realized, over a period of time, is that there are a number of tensions in the areas that we serve. So, the lack of infrastructure, the lack of skills, the lack of resources, a number of realities that make that initial idea not possible.

So, where we are now, what we realize is probably more feasible in the Zenzeleni model, is that there is at least these two tiers, where we call the not for profit company the mezzo layer, or the coordinating layer, and, at the local layer we now have derived a three layered system of local ownership, where we've learned that, instead of a kind of a big bang approach to community ownership, that community ownership can take place gradually, layer one, two and three. Where, at layer one, we envisage that we create groups of micro entrepreneurs in a community, who would own and manage their own hotspot, and that those hotspots begin to serve their livelihoods. And those entrepreneurs, individually and collectively, can graduate to a second layer where they begin to put value added services into their business model. And, they can even graduate further, where they can start reselling, taking care of, a larger part of the local network system.

So, we believe in this gradual kind of introduction, of graduation of local ownership. But, given the complexities of all the other elements of the ecosystem, we do believe that the mezzo layer, which is the not for profit now, will continuously play a role, especially in terms of regulatory and other support, in managing and maintaining the backhaul that provides service to the local communities. Then, of course, inherent in all of that is this big point I mentioned just now of the tension, because people surviving on that less than $1 a day, who can then only afford currently the 25 Rand a month voucher to the average citizen, is a cross-subsidization effect. So, the business has to become sustainable, because, as I mentioned, we cannot rely on project funding. So, the business has to scale, and it has to scale, get sufficient clients, let's call them anchor clients, really was small business type clients, who would at least bring a sustainable layer of income so that the NPC can grow its network business with those types of, let's say, non-citizen clients, to a sufficient level where it can now provide the cross-subsidization to people. Because, even the people that we serve, that 30 Rands, South African Rands, which is under $2, is not affordable. So, we have to, in a sense, cross-subsidize, and this is the role of the mezzo layer, as we see it.

Carlos Rey-Moreno
Thank you. Thank you. Thank you very much, Shaun, for that. You were talking about the cross-subsidization from both projects, and anchor clients, to actually make affordable the connectivity to those users that use that that monthly rate, under $2 a month, in the hotspots. What other financial tools and instruments have Zenzeleni relied on over the years, or can you maybe go a bit deeper into the different financial sources. I believe there has been some support from a public agency, for instance, to document the model. You can maybe go a bit more in depth into that, as well as, What is the path for the future, both for the self-generated revenue, as well as, potentially, you know, the discussions with public agencies as Bruce was mentioning to support the work that Zenzeleni is doing?

Shaun Pather
OK, I'm gonna go backwards with the answer. In the South African system, and as in many other countries, actual fact, public policy does cater for Zenzeleni, or does cater for the kind of community based service we are providing to deal with underserved areas. I mean, in this country that is catered for in our electronic communications act, in chapter 14 which is called the Universal Service and Access Fund. Regretfully, Zenzeleni, which in my view is most deserving of something like that, has not even seen a single cent of that fund, which would have put us in a very different place today, in terms of our scale and growth, if we had access to the funds, but that's a different debate. So, in the main, Zenzeleni has relied on various sources of funding, project funding, to keep itself going. So, once it's been running projects of various types, capacity building projects, computer labs and the like, and things, it's been using those funds to keep itself going, to try and continue keeping the network business going.

We've also received funding from a number of organizations, like Mozilla Foundation, initially, APC, and others. We also have received funding from the South African government, though not from the Universal Service Fund, but that was to help support us to understand, document, and grow the model. So, that was through the Department of Science Innovation Technology Innovation Agency. But, all of these funds are for project specific activities. So, the organization is running its network, and undertaking those types of project activities, which as we now, as the board, and as the mezzo level, have decided that we will give very concerted effort and delineate the work of the network business so that it can grow.

And in terms of how we finance that, well, the idea is somehow the other, we've got to finance to bridge, because it's a catch 22, We need to get to a sufficient level of scale of so called anchor clients, or call it non-citizen clients, to get sufficient income to grow and expand to more communities, to provide the 30 Rands a month access. So, our business model, our financial understanding, going forward is about scaling the network business. And, at the same time, that the project activity can continue in parallel, but only insofar as project income will fund project activities, but we've got to scale the network business. I hope that's making sense.

Carlos Rey-Moreno
Yeah, it is. It is. Maybe for the last couple of minutes of the section briefly. One question because when we were preparing this, we were talking about it, right? There are a lot of value on having been incorporated as an NPC, not for profit company, as a membership-based organization, but also it has some caveats, or some cons. Can you please maybe tell us a bit the pros and the cons of that decision? I mean, through the 4 years of existence of the mezzo organization arrangement?

Shaun Pather
Yes Carlos. So, actually, I'm trying to get back to the thing of the early days, but the decision for a not for profit company was number one, we did believe in the notion of not wanting to make a profit. We believed in the notion of being an entity to drive, you know, to be community based, and so the not for profit kind of came up. So, in an ideological sense, it served the interest of the founding members. And, of course, then it's also the not for profit kind of gave, you know, not direct ownership, no equity and the like, of the founding members, so it addressed those ideological matters, and that was the pros. The other pro is as a not for profit, we are able to get certain tax exemptions and the like. And I do think as a not for profit, we do appear to be more appealing to people who support Zenzeleni, support the cause of Zenzeleni, and who now, in the past, and in the future, would continue to lend support to us. So, those are all some of the pluses.

Minuses, of course, might be... are, for example, I think, the difficulty in attracting investors who don't want to invest in a not for profit, who might want to take some equity, to kind of get some return going forward. I'm trying to think what might have been the other negatives of our model that I'm slipping my mind, maybe just prompt me a little bit. But, as we stand right now, the years of experience we have, I still think having created a not for profit model has been the right thing to do in this space. Because, as I see the policy landscape in the country, shifting and evolving, largely, I think, also out of advocacy works Zenzeleni has been doing with APC and others, that there is going to be a role for not for profits being recognized in the regulatory landscape. So, I think those are the pluses for me, and that it is... Retrospectively, I still believe it's that correct decision we made

Carlos Rey-Moreno
Thank you. Thank you very much Shaun. And yes, actually, there was a surprising draft policy that was released on the eighth of September that contains an entire section on community networks, and creating an enabling environment for community networks. We will see what it is, but it is from the government, and it looks like all those years of advocacy may result into some of those barriers being addressed for the likes of those organizations that actually try to mentor, try to support, try to serve backhaul services, and upstream Internet services, with, you know, a number of users and a number of other ISPs even within the network, train them, you know, buy bulk equipment and the like, and then synergies of wholesale for an entire ecosystem that goes beyond one single ISP. Right? And I believe that's one of the biggest elements when you also want to try to reduce the cost and provide affordable services into rural areas where disposable income is indeed an issue in Africa, and in South Africa, and rural South Africa in this case.

Anyway, thank you very much Shaun. As Jane was saying, there is a case study in the annexes of the report about Zenzeleni. This section was about section 3 of the report, on ownership and operating models. Beyond these type of models, it talks and it takes you through the framework of many other ownership and operating models, and I hope it was useful. Thank you very much, Shaun.

Shaun Pather
Can I have 60 seconds to make a comment? Just, Carlos, despite the lack of funding from Universal Service Fund, etc. Zenzeleni has survived. It is existing, it has a future. We've just conducted an independent evaluation with the funding from Department of Science and Innovation, which provides empirical evidence that Zenzeleni has made a difference in the lives of the community itself. And I just want to acknowledge here, on this platform, the thanks and support for many of the stakeholders, including APC, that, you know, has made Zenzeleni possible. Thank you very much, and to the stakeholders around the table here today.

Carlos Rey-Moreno
Thank you very much. Thank you very much for that reminder. Ben? It's a pleasure to pass the microphone to continue this presentation. Thank you very much.

Ben Matranga
Thank you very much, Carlos. And thank you all for joining us and sticking with us. We're going to cover section 4 of the report, which is about financing mechanisms. And our goal here is really to go... You know, one of the big takeaways of the report is to understand that financing mechanisms change through each lifecycle of a community connectivity provider. And what does that evolution actually look like? So, we have the tremendous honor of introducing Chris Conder with B4RN, B4RN is Broadband for the Rural North. And we're going to walk through, B4RN, what has been their journey? What has been their journey from the early years to to over the past decade to currently How have they raised capital seed capital built a network of over that time?

Now, as a quick introduction to Chris, Chris has lived in the Lune Valley in Lancashire, in the English countryside, for many years. 2002, almost two decades ago, she began campaigning for rural broadband, and in the early years helped establish a wireless network around her village, that was the rural village of Wray, that was supplied by satellite network. Now that is transferred over to fiber. To give you all a sense of B4RN in terms of the numbers, this is over 20,000 homes past 11,000 customers, there's 5000 kilometers of fiber that have been laid. And, one of the things that we always find incredibly interesting is there's over 3000 shareholders that are part owners in this community network. Chris has been a true pioneer in self installation of fiber, everything from DIY fusing, but not only how that works, but then training a community of volunteers. Many of those folks have gone on from training to now work for B4RN. So, we are incredibly excited to welcome Chris here, and let me start off with a pretty basic question. Let's go back to the early years. How did B4RN get off the ground initially, and finance that initial phase of growth in those early years?

Chris Conder
Sorry, B4RN was, first of all, inspired by the community in the Lune Valley who built a wireless mesh network. So, there was a wireless mesh network with help from the local university, and there was a satellite network as well for businesses. So, because we knew we had a community that was interested in getting connected, we then approached a chap called Barry Forde, who was the real genius behind B4RN and a network planner. And we came up with this plan to access funding which was available at the time through the agriculture board here at Defra, and it was three quarters of a million, so we built a project business plan based on spending three quarters of a million pounds, to get what we classed as a digital parish, which was a fiber feed to seven or eight different villages in the valley. That was our plan. And it was a really good plan. And, in the process, we picked up champions and volunteers from all those villages, so we had a management team. That management team consisted of retired doctors, retired accountants, retired solicitors, all sorts of different people representing the community. So, we had a massive skill set, our management team which all fed into the plans, which Barry then converted into the business plan, which went forward to get this funding. We almost.. well, we had this funding, but at the last minute it was taken off us by the Northwest Development Agency and given to our local council, who gave it to the incumbent. The incumbent just wanted to do fiber to the cabinet, you know, fiber through the broadband, through the phone lines. And we were just totally horrified and disgusted, having done two or three years of really serious work and research and inspiring the communities and talking to the communities. And so, we just said, well, in as how we've done all this work, we've got this business plan, we know the communities want it, why don't we borrow some money from a bank or something? So, we asked at the bank. So, none of the banks would give us any money. The government wouldn't give us any money, even though they got money earmarked for rural areas like ours, with the Defra plan and everything. They wouldn't give us any money.

So we said, right let's go to the people. We know that people want it, because we've met them all at the parish meetings. We know they want it. Let's go to the people and ask them for the money. But, you can't do things like that. You've got to be a business, and you've got to register as a business with the Financial Services Authority. You've got to do this, and you've got to.... Well, let's do all that. Okay, well, we'll do all that. So, we did all that, and we're all volunteers so we were all flying by the seat of our pants, and we went to the people and we said right can you raise £200,000? And, if you can, we'll buy all the ducts. And then we'll give it you back and you can dig it all into the ground with your tractors, and your mole plough. The people just rallied to the cause, and we raised £300,000 pounds. By the deadline, which was three months later, we had raised... in three months, we'd raised £300,000. And our budget for the seven parish... eight parishes was 1.3 million. And we were confident that once we started digging, all the other people in the communities, who thought, They're a pile of nutters, this isn't going to happen, would then buy shares.

So, the model that financed B4RN originally was, everybody who wanted it bought shares. The shares were valued at a pound. The shares would not go up or down in value. And, the only help we had from the government, in the first 5 or 10 years, was the fact that anybody who was a taxpayer who bought shares, got 30% tax relief on those shares. And that was a big investment. That was a big thing. To make people who were fairly wealthy, invest, buy more shares than they needed, and that helped a poorer person. So, you know, because the interest rate was good as well. We pay 5% interest on our shares. That's another way of paying money back into the community. I'll have to keep stopping, and you'll have to ask me another question. Otherwise, we'll still be here tomorrow.

Ben Matranga
No, thank you very much, Chris, for that introduction. I think, you know, there's a lot of people in the audience, I'm sure, who are in that near death experience of feeling like, will our organization last? And seeing how B4RN has been able to push through, and now a decade and a half later, have the size that you have. I know that's an inspiration to a lot of folks who are here. And I want to dig into that. I want to dig into, so that there's that first period of using the shareholder mechanism, and people got that tax benefit. Walk us through the next phase of growth, and how you began to receive both a combination of equity funding, potentially a bit of grants, and then how that led to the government voucher scheme, and how you were able to work with the government to influence that government voucher scheme, and then, maybe, explain a little bit of the trade offs between those. Were they good, were they bad? Was there anything else you would do differently?

Chris Conder
Well, when once we got going, and we proved that we could light up our own fibre, and we did at a gigabit symmetrical, so it's the fastest... at the time it was faster than NASA. So, we are the fastest network in the world. We can now do 10 gigabit, I've actually tested it at my farm. I can get 10 gig at my farm. So, we started building this network. And it was at one end of the seven parish, of the eight parishes, and they just went hell for leather up the mountain, digging all this duct in, and spending all the money that we'd all raised together. So, we'd another group of people at the other end saying, Well when are we going to get digging here? So, they got digging and they started.

So then, we needed some more money. Luckily, more people bought shares. So, we literally were living from hand to mouth. If we wanted fibre, we couldn't buy duct. So, we had some really good suppliers who looked after us and gave us 90 days credit. It was that tight in the early days. But, because one village got it, in our eight that were in a cluster, everybody around that village, in other villages, then decided they wanted it, and put money in, and they wanted duct. So, it was like a spider's web, it just started growing and growing and expanding and expanding, and we needed more money to buy more duct, to buy more fibre, to give to them to build it with. So, one of our directors approached the Esmée Fairbairn Foundation, and they lent us some money. We had to pay it back, of course, but they lent us some money. And the she said, we still need some more money, we need to buy more fibre, we need to buy more cabinets, you know. And we were still all volunteers at this point, nobody was getting paid. And she came up with this legal scheme, where people could loan us money. So, they could become shareholders, which is a big risk, but it's less of a risk to loan a company money. So, the community started loaning us money, on one, three, five, or ten year loans. And the legal people in the committee made sure everything was done legally. And that kept us going for another few years.

Then, once we reached 600 customers, we could pay our way, you know, with our backhaul, and so we took on our first employee, who was Alistair, and he was somebody who came to help us digging and fusing, and then became our first B4RN fuser, so he was the first person. Then when we got to 1000 people, Prince Charles came and lit the 1000th fiber for us, and we could employ a secretary, so it meant Barry was freed up to do more network design and planning, instead of paying all the bills, so we had two members of staff. Then, about the 1000 mark, that's when it exploded, and lots of people came live at one time, and that's when we got more and more staff.

Then the EIS Scheme, which was the tax-free scheme, stopped, and investment dropped then. The shares dropped, because rich people could no longer get tax relief. So, we kept on with the, buy £1500's worth of shares and you will get a free connection. So, your connection was free, the service you paid for, but the connection was free. That brought another load of shares in. And then we started ring-fencing shares, so that the shares one village bought could only be used in that village, to stop another village taking all the money for fibre and duct. That worked, and that brought more money in. And then, the voucher scheme started.

Now, the voucher scheme, from BT UK, the government, is a very good scheme, but it is very very difficult to access. So, because we already had money, and customers, and an income, and a network, we could afford to connect a person on a voucher, the community could connect that customer. And once that customer goes live, you can draw down your voucher money. But, it's no good for a startup company, because you have no money to get the customer live in order to claim the voucher. So, it has its drawbacks. It also means we need two members of staff employed solely to administer the vouchers, because naturally enough if it's public money, civil servants can't go shelling out vouchers like the sweeties, they have to be accountable. And so, it is a very complicated process to get vouchers. It's not easy. No government money is easy.

But what I think, this is all my opinion, this isn't B4RN's opinion, I'm just a volunteer. But, what I think should happen is, the government should figure out a way of enabling the people to do this sort of stuff, because it's the community input that keeps our price so low. I mean, there's nowhere else in the world that you can get what we deliver, gigabit symmetrical with all the backup and support that people get for £33 a month. It's just so good and so cheap. And the community ownership means, because we are the company ourselves, we the people, B4RN on to the company, we the people own our company, and we look after it. So, if we see a digger going up that field, and we know our duct's in that field, we are going to tell that digger man to be careful there, because our duct's there. And we look after our network. And all our network is buried. We don't use any poles. It's all got to be underground, so it's all safe. We also see... it's like the other chap was saying ,you know 50/100 year investment this, in the infrastructure. The infrastructure is our asset. And I've forgotten the question now.

Ben Matranga
No, that is extraordinarily helpful. Thank you. And I just want to let everyone know, you know, this is a success two decades in the making. So please, slide... you'll see it on slide 114 goes into depth, explaining a little bit over time. Another point I just wanted to highlight is also, there's... page 105 of the report talks about that financial sustainability metric. And I think, you know, Chris, you talked about that 600 customer mark when things started to change, being able to afford your own capex. Walk us through kind of that division of labor. What has always fascinated me about B4RN is the division of labor between what the community does, in terms of trenching and ducting, and what you guys over time had kind of more professionalization, in kind of the technical skills. How has that evolved?

Chris Conder
Yeah, it was really interesting in the early days because if you had a spade, or a digger, or a mole plough, you could put our duct in, and we paid you £1.50 a meter in shares. That's how we paid the farmers for digging the ducting in. And then we insured those people, so if they dug through a water main or something, or hurt themselves, or hurt somebody else, we insured them. B4RN insured them as volunteers. But once you get into a more professional level, which was about the 2000, 3000 customers, we had to start thinking ever so much more about health and safety, because more people were involved, and some of them, you don't know how good they are, how bad they are. So, health and safety and human resources does come into play, and all that costs money. To become more professional, you got to have more money. So, nowadays, all our digging is done by professional contractors, and now I think they're paid £2 or £2.50 a metre. It's still way below industry standards, but because it's through farmland, it's easy work. So, some days they can make a lot of money. And some days they have really bad days, where they're going in a gulley, and a fence, and a wall, and all sorts of problems to overcome, and they won't make very much money. But they're very good contractors and they take it on the chin and they get on with it.

We also used to let people install their own houses. We found it does cause a lot of problems and our new CPE is so small and so delicate they're breaking the fiber inside it. And so, we found it's easier to get contractors to do it. And what we do is we find local contractors in each area, so we're spread on a massive... well massive to us. It's small compared to America in Canada, but to us we cover a massive area. It takes four hours to drive from one end to the other of our network, and our remotest bit is six hours away. So, to us, it's big now. But we try to have local people in every area doing all the different jobs. So, for example, we have one lady whose UPS had failed. And we advise all the elderly people on free phone lines, you know, the VoIP phone lines, to get a UPS. And no matter what we said to her over the phone, we couldn't ascertain what the problem was. So I said, well, it's not a problem. I'll get Martin to go around. So, I rang Martin, who's a local champion. Oh, I know her, he says, I'll go around and sort it out.

And that's the strength of a community network. Everybody knows everybody. Each area is subdivided into little ones with a champion, with volunteers. If there's a problem, the local people will... a little problem. I mean, big problems, if it's cut fiber, we have teams and they're out there within an hour fixing it. If it's a big break, you know, well within the hour, that the break has been found to the nearest meter, and the teams are on the road to it and get it mended. So, even big 288 fiber strikes where the fibre's cut right through, it's mended within 24 hours. You know, even if we have to send two teams, we'll send them, and they're just amazing. Our staff are absolutely awesome. And they're all recruited from locals, if you will, all local people and really dedicated, and they are local volunteers, who are the ones who go around, checking on people's fittings and making sure it's all done properly. They stay loyal to us too, because they're shareholders. They own us, they are the company. And I've forgotten the question again.

Ben Matranga
Thank you so much for that context. And, you know, it illustrates a big point that we tried to get into the report, which is that there are different stages. We talked about stage one and starting, then sustaining and growing. And there's certain things that change in each of those stages, division of labor, finance, etcetera. But the one common thread that doesn't change, is that idea of community ownership. People feeling like this is theirs, and this is their...

Chris Conder
The thing with the funding that.... I got the question, and then I forgot to answer it. The next big jump in funding was when we borrowed 3 million pounds from the Triodos Bank. It's like a crowdfunding bank, isn't it? Triodos Bank. Cooperative type bank. So, we borrowed the 3 million in order to build out, to get the vouchers. You get what you do. You borrow the money. You can only borrow the money when you've already got money and assets. Otherwise you can't get the money. So, you borrow the money, so that you can then harvest all the vouchers, because the vouchers are available for your area. So, you borrow the money. You buy more equipment. You take on more staff, so that you can connect more people, and get more vouchers, and help more people. And that was agreed upon by our shareholders. We could either sit tight, and start to make money, and give it back to the communities, because that's in our rules. We can't keep this. Or, we could keep on helping more people. Shareholders voted to help more people.

So, you borrow the money so that you can get more vouchers. Immediately. you've borrowed the money, and spent the money on staff and vehicles and equipment, the government pulls the plug on the vouchers because they say, Oh, we've got to go into procurement now, because the incumbent wants to do these areas. Now, in a year's time, the incumbent will decide, Oh, it can't actually do those areas. But, you've had staff, investment, and everything, ready for a year. Now, luckily, our directors and managers are quite smart. And they had already harvested enough areas to keep us in work for a year or two. So, we're okay and we'll be able to pay it. Well. I think we have paid it. I don't know if we have or not. I'm not involved in that. But, you can pay your loan back.

But, another business could be tricked that way. And, I think, that is another thing. It's a government failing not to realize the danger the incumbent is to rural community startups. And, if they're not prepared to do these areas, they shouldn't really be allowed to interfere with what governments decided to do, to give vouchers to our rural areas. The incumbent can just stop it just like that.

Ben Matranga
Well, thank you very much, Chris. I know that's very powerful, all of us. And thank you very much for the time, and the success that B4RN has had over the years, and for being so open and generous in sharing all of that information. Now, let me turn it back over to Juan who's going to walk us through some of the recommendations and questions from the audience. Juan, over to you.

Juan Peirano
Thank you very much, Ben. It's a pleasure to be here. My name is Juan Peirano. I'm with the Internet Society. I'm a senior policy adviser. I had the honor and pleasure to be part of the steering committee working in this project, and in this report. It was amazing the amount of knowledge that I gathered from the people participating was very, very high. And, I cannot wait to share this with our community at Internet Society and others, because I shared it already internally, and everyone is very, very excited. So, it's great to have this launch today.

I'm going to go very quickly with an overview of the recommendations, because, as Ben was mentioning at the beginning, we want people to nod their heads when they are reading this, so they are very clear and very actionable. And, again, because the target audience was, or is, government and policymakers, CCPs, so community providers and investors, we have three main areas of recommendations.

First of all, for policymakers, it is very clear and very obvious. Try to enable CCPs as much as possible. And we have been hearing stories about how that can happen, but I invite you all to read some of the recommendations in the report, basically spectrum, rights of way, unlocking Universal Service Fund for CCPs. Among others, also establish procedures that are easy for CCPs to apply for a license to be legally established. So, for CCPs I think most of the recommendations are focused on being able to recognize the stage in which the CCP is in, so they can basically build a framework that fits the purpose of their community, so they can achieve that financial sustainability. So, this is the main recommendation for every CCP, and not... At the end of the report is the recommendations.. But throughout the report, you can see examples and ways to achieve this. So, I think, again, a very clear and actionable recommendation. And, finally, for funders, in which ISOC fits in. It's how we use this report, and how we try to establish ourselves in this ecosystem to unlock as much funding as possible. Again, depending on our strengths. As an example ISOC is on the grant stage at the very beginning, so how we can enable as much funding for CCPs as possible, and how we can help grow them further and become more sustainable. So, this is a very, very quick overview, and I invite you all to read through this report.

But what I wanted to do now is have a very, very quick fireside discussion with the panel, and ask everyone that has been participating today a very quick question about their recommendations. And, it can be in the report or outside the report. And I would like to start with the community providers. They have to pick one recommendation for the audience, of what they should do. What would their recommendation be? And please, let me start with Chris, maybe one recommendation, one minute recommendation for the audience.

Chris Conder
I would say, just follow our thing which is JFDI. Get the community involved. Use the skills of your community, get a good committee together, a good management team together, and make a good plan, and then just go with this, and your people will support you, and I just hope the government will support you too, to get started.

Juan Peirano
Yeah, perfect. Build it and they will come. Shaun, recommendation for the audience.

Shaun Pather
Thank you. Thank you. I have not a single recommendation. But I mean, the advice, or I think the foremost lesson we've learned, is that we cannot take the realities of on the ground for granted. But, it needs a proper and thorough assessment and understanding of the nature of community ownership to ensure sustainability. That's the lesson I would I would offer. Thanks.

Juan Peirano
Great. Thank you very much, Shaun. Bruce?

Bruce Patterson
What I would say, and I think the report really develops this thought, is that we can't outsource the solution. We all have a voice in this. That includes the communities, that includes the community partners, includes financial institutions, and includes public policy. All have got to come together. If we're going to bridge the gaps we have, it's going to take all the stakeholders working together. So, my advice would be, in the communities, recognize you have a voice, step forward and participate in the dialogue. Start to shape your own outcomes, and you can do it if you participate. But, if you sit back and wait, you're going to be a long time waiting.

Thank you very much, Bruce. And then very quickly, maybe to the funders. Connecting Humanity? Jochai, a one minute recommendation for the audience?

Jochai Ben-Avie
I think that there are an awful lot of community assets that exist, you know, from knowledge and skills to, you know, legal structures, and, you know, potentially community contributing capital. And so, I would start by really figuring out what your community needs are, and looking at what assets you have, and build from there, in terms of, and know that there's a variety of different models to meet the needs of your community.

Juan Peirano
Thank you very much, Jochai. Carlos, one minute recommendation for the audience?

Carlos Rey-Moreno
Thank you, thank you. I think is something about the resilience of the communities that are living in in areas that are not profitable, not of interest of the the main traditional providers, and how, in this case, at least on the rural areas of the global south where APC works the most, there is a need for some sort of a source of CapEx. Government is spending a lot of money putting funds into private networks, people from urban areas, far from the realities, far from the interest, that when things don't go, don't work, they just leave and forget it. There are a lot of examples. Here in South Africa where Zenzeleni works, this happened, and the company filed for liquidation. So, asking governments to pay more attention, and to really see the evidence from this report, and others, that communities, no matter how rural they are, want to do it, can do it, and they will be supported if they start the journey. Thank you.

Juan Peirano
Thank you very much, Carlos. And finally from Connectivity Capital, Ben or Anoop?

Ben Matranga
Yeah.

I think, putting my financer hat on, I think one hope that we hope everyone takes away from this report is this. The concept that risk exists on a spectrum. And, what you do over the lifecycle of a CCP is about reducing risk. And, the strategies that you take in the early days will evolve over time, and it opens a lot more doors to financing in the later years. So, this idea of a) committing to a path of financial sustainability, but then realizing over time, you're reducing risk in the eyes of a financer as you grow, connect more users.

Juan Peirano
Thank you very much, Ben. And now we know that we have a bunch of questions from the audience. And we are almost at the top of the hour now. Therefore, maybe we move forward to the closing remarks, and then we keep track of these questions. And we come back to you. Please reach out to any of us in the panel, because we are very, very interested in your questions. So, maybe I just pass the mic back to Jochai for some final remarks or reflections. Thank you very much.

Jochai Ben-Avie
Thank you, and thank you so much to all of our speakers and panelists today. This was a fascinating conversation. It's always so inspiring to hear these stories of communities coming together and building their own Internet, and spoiler alert, the report is full of a series of other case studies of equally inspiring communities, which I encourage you to check out. I think it's clear there's no one best model for how to meet community needs, and there is certainly a wide range of sustainable community connectivity provider models. You know, incumbent operators, the way telecom has traditionally been built, is not the only option. And, similarly, there's a wide range of financial structures and sources of capital that can help to meet communities, to meet their digital equity needs, even in very extremely low income communities. And very remote communities.

And while these economic and business models might not look like a traditional telecom, there are sustainable ways of supporting community connectivity providers, and these investments are not as risky as they appear. And so I would ask that you download the report and read it, and want to thank you.

And please share this report with partners and allies. We really hope this will be a resource to communities themselves, and community connectivity providers, to regulators and government policymakers, as well as to investors and financiers themselves. And, finally, you know, please do take a look at our website, Connect Humanity Fund, as well as our other friends here presented today. All of our organizations produce a variety of materials and resources. And, thank you, everyone for all that you do to advance digital equity in the world. Enjoy the rest of your day, evening, wherever you may be.

Chris Conder
Good night.

Ben Matranga
Thank you so much, everyone.

Chris Conder
I've answered the questions on the chats.

Anoop Nagendra
Thanks, everyone.

Bruce Patterson
Thank you, everyone. Thank you Chris.

Shaun Pather
Thank you very much. Been an honor. Bye bye.