DECODING ECONOMICS OF MSME'S & LEVERAGING DIGITAL PUBLIC INFRASTRUCTURE

Ft. Neelkanth Mishra

Sattva Knowledge Institute SKI

DECODING Impact

[00:00:10]Rathish: MSMEs are stuck in a vicious cycle of limited access to credit, limiting their ability to grow, limiting the ability to create value, which limits their ability to access credit again.

[00:00:20]Neelkanth: In China, in 2022, 60% of GDP came from MSMEs. In Europe, more than 50% of GDP comes from MSMEs. In the US, 44% of GDP comes from MSMEs. So if you think about a jungle, you need to have a certain amount of foliage. There needs to be a certain number of deer and a certain number of tigers. And it's somewhat similar to that. So it is in this fertile crowd of MSMEs that larger firms emerge.

[00:00:48]Rathish: I think building the mindset to work with data abundance is, I think, something we have to build at scale and experiment often. We are in a data surplus culture. How do we build mindsets and experimentation models to leverage that?

[00:00:59]Neelkanth: the success that India has had in DPI is being recognized the world over. The government now has a cell to promote DPI or Indian DPI to the rest of the world. The equivalent of Aadhaar, which is MOSIP is now being attempted in two different countries. So there is a lot of, I think, belief that this thing works.

[00:01:21] Rathish: Welcome to Decoding Impact, hosted by me, Rathish Balakrishnan, where we talk to experts to understand what it takes to solve complex problems at scale.

[00:01:31]Rathish: One of the topics that we've discussed over and over again in Decoding Impact is the topic of MSMEs. Micro, small, and medium enterprises account for 30% of the nation's GDP. And for us to achieve the 2047 vision for India, it's important for MSMEs to account for 50% of our GDP and 60% of our exports. However, as we've spoken before, MSMEs are stuck in a vicious cycle of limited access to credit, limiting their ability to grow, limiting the ability to create value, which limits their ability to access credit again. Over the last few seasons, we've spoken about what are various ways in which we can solve for this challenge.

[00:02:14] Rathish: Today, we want to talk about how digital public infrastructure offers us an opportunity to enable access to capital to MSMEs. How can MSMEs look to push past the current vicious cycle to achieve growth. And how does this all fit into the larger macroeconomic view of India.

[00:02:35] Rathish: To discuss this topic, we have with us Mr. Neelkanth Mishra, who is the Chief Economist at Axis Bank and the Head of Global Research at Axis Capital. He brings over two decades of experience from his time at Credit Suisse and has a wealth of insights and experience in both shaping financial markets and national policy.

[00:02:57] Rathish: I cannot think of a better person to talk about this topic that we have in hand. Thank you for joining us today, Mr. Mishra.

[00:03:03]Rathish: I had a chance to listen to some of your earlier podcasts and what surprised me were 2 things. One, you were all India fourth rank in IIT and two, you had nothing to do with economics in your education. I wanted to understand what does it take for an engineer to become a globally and nationally renowned economist.

[00:03:23]Neelkanth: A lot of serendipity, a lot of good luck, a lot of good people to learn from, and a lot of curiosity and thick skin. So remember that last 20 years, I have been a sell side economist, basically publish research, give out forecasts, forecasting even in the best of times is a mugs game.

[00:03:43] Neelkanth:You very often go wrong I personally think that 60 right, 40 wrong is a superlative score, so 40% of the time you'd be wrong in the public eye and especially if you're not an expert at it and you're learning on the fly, which is what I did for the last part of the last 15 years you need to really have a thick skin, and take on intellectual risk, meaning, that even today I think on India, at least I understand a few things, but, I'm curious about why the U. S. economy did not get into a recession and in doing so, I explored the fiscal aspects of the U. S. and, out of that, I stuck my neck out and said interest rates are not going to fall. And when they don't fall, you say, wow, I learned something new, but I could very easily have gone wrong. And people would have laughed at me that, okay, fine.

[00:04:39] Neelkanth: So you got a few things right about India, but now you're going out of your league. So you have to, you have to keep pushing yourself, keep learning new things. And of course, you need a lot of good luck, right place, right time, smart colleagues you can learn from, firms that give you an opportunity, to experiment, to take risks. So all of this just fell into place and I wish other people go through the same journey. It's been a lot of hard work, but very exciting and very happy journey.

[00:05:09]Rathish: One of the things you mentioned in one of your podcasts, Neelkanth, that stayed with me is this phrase intellectual risk taking. People talk about risk taking from a financial perspective, but when you said, and explained what intellectual risk taking is, I felt that something that resonated with me personally.

[00:05:23] Rathish: I'm in the knowledge industry. Very often there is a chance to play it safe and provide a recommendation that you feel you're completely sure of that you're not going to lose your face for, but you don't break into new frontiers. You don't find new truths if you keep doing it. And I think I'm taking that as a private lesson for myself. And I hope I embody that quality of intellectual risk taking in our conversation today.

[00:05:43] Rathish: So, Neelkanth, I wanted to talk to you about the 2047 vision for India. Like you said there, it is not a certainty, but we have a high chance of seeing significant growth over the next three decades. And one I wanted to check with you to give us a quick overview of what is this opportunity. But specifically, Neelkanth, if you could talk about the role of MSMEs in helping us achieve that vision. That would be a great starting for this conversation.

[00:06:07]Neelkanth: In any economy, I think MSMEs play a very important role. And this is not just true of the current environment or the current, current century, but over even the last several centuries, right? So as you can imagine, when the human society started to evolve, most businesses were local.

[00:06:30] Neelkanth: And therefore, there was very clear, focus on local markets, local employees. Almost by definition, they were small in size. As the globalization effect started to show up and, large trade links and trade networks started to form and large pools of capital started to accumulate.

[00:06:55] Neelkanth: We started to see larger firms, get created. One of the challenges or the risks of having large firms is that if they're a very large part of the economy, if because of whatever reason, right, so because of bad management, bad succession, they start to fail, then, a very large part of the economy gets damaged.

[00:07:15] Neelkanth: So what you see instead is in any economy, most economies, for example, in China in 2022, 60% of GDP came from MSMEs. In Europe, more than 50% of GDP comes from MSMEs. In the US, 44% of, GDP comes from MSMEs. And so the thing is, these MSMEs are not MSMEs just because it's fashionable to be MSMEs because it's just that's the natural state of the ecosystem, right?

[00:07:42] Neelkanth: So, if you think about a jungle, you need to have a certain amount of foliage. There needs to be a certain number of deer and a certain number of tigers. And, it's somewhat similar to that. So it is in this fertile crowd of MSMEs that larger firms emerge. It is the diversity of this MSME ecosystem, and the training for employees that they do, the supplier networks, the customer networks.

[00:08:10] Neelkanth: Now, occasionally you do need things like aircraft carriers to carry along a whole flotilla, right? So a Samsung Electronics from Korea, if it becomes very successful, it can carry along a lot of smaller firms, but even to supply one Samsung, you need hundreds, if not thousands of smaller firms. And then, so that just becomes the last mile assembly.

[00:08:35] Neelkanth: So MSMEs are an absolutely critical part of any economy and they have to be an integral and very critical part of the Indian economy as we think about the next 25 years.

[00:08:45]Rathish: And here I wanted to ask you because you've had a global view of MSMEs overall. MSMEs are micro, small, medium enterprises. In general, if you look at the distribution, maybe in Europe, let's say in Germany, which is known for a lot of small and medium enterprises, et cetera, or even in China, where you said it's 60%. I assume that the share of small and medium is usually comparable to the micro. In India, a significant part of what we call MSMEs are micro enterprises, more than 90%

of them employ less than 10 people they, so income employment generation itself is often limited. Is that unique to India as a country or is that again, part of the design in most countries where MSMEs play a significant role?

[00:09:25]Neelkanth: It is not unique to India, if you think about India only as a country where per capita GDP and per capita wealth is still low, right? So when for example, China was developing, when China really started to reform and open up in the late seventies, the town and village enterprises which were really, small groups of people who came together and started to work together.

[00:09:51] Neelkanth: So they were very small and it's just that they were able to get access to capital and then they started growing very rapidly. And frankly as we think about where China has or what China has done over the last 50 years or 45 years and what India needs to do, it's done in the last 30 years and needs to do in the next 25 years.

[00:10:12] Neelkanth: And how it's different from what happened in US and Europe is that, those economies had 150 to 200 years of growth at, say, 2% a year. What we are trying to do is squeeze in, that level of growth in 50 years. And what that then needs is a very different type of a different scale of capital formation.

[00:10:38] Neelkanth:Very different type of risks that need to be managed. And and frankly, the reason why micro enterprises are micro is because they don't have access to that much capital,

[00:10:50] Neelkanth: Because frankly for them to grow, we need to find ways of giving capital in the right size. Like, you know, if you are a shopkeeper you don't need 20 Lakh rupees of loan, right? And small shopkeeper, right? A small shopkeeper needs 50, 000… maybe one lakh rupees of loan. And then over two, three years, he or she will be able to multiply that, and then be capable of taking a five lakh rupee loan.

[00:11:20] Neelkanth: And then, you know, then they would set up a, maybe a department store. The point is that at early stages, we need to find ways of giving this capital at very small ticket sizes so that the micro starts to become small and the small starts to become medium.

[00:11:37]Rathish: Absolutely. And so from what you're saying, so two things should happen…and correct me if my understanding is correct. One is as growth happens. You know, when the wave rises, all the boats go up. So some of them will automatically get the market opportunity. The Samsungs of the world will carry them.

[00:11:55] Rathish: But the second is we still have to create the right structures, economically and financially to enable that growth. Otherwise there is going to be, it is going to be like a gravity force that pulling them down, that there is a market opportunity, but their ability to act on that market opportunity might be limited.

[00:12:11] Rathish: So while the force of growth will pull them up. Yeah, creating that infrastructure that will enable that growth in terms of capital access becomes important. Will that be a fair summary?

[00:12:21]Neelkanth: Absolutely. And also see one very integral part of enterprise formation or enterprise scale up is, are you giving, the right environment in which to grow? So for example, if say there is a street side vendor who's selling say pani puri, right? And he wants to set up a small corner store.

[00:12:48] Neelkanth: And for that to happen. Yeah, of course, he will need to get a license. He will need to go out and rent. He will need, a lot of certification. Now, if you make that certification very problematic, if you, if you then start harassing that, or as the state starts harassing that person for, certain you know, tax certificates and you didn't do this and you didn't do that, then there is an aversion to even growing big because then you're saying, Oh, that's like too painful to go through that long process of certification and bribing and, harassment, in order to grow.

[00:13:29] Neelkanth: And who knows whether this business will work anyway. So it's not just, I would say, you know, so while capital is an essential part, you can't grow without capital. But there are other parts of the environment that need to be made more convenient and easier for smaller firms For them to be able to grow faster.

[00:13:51]Rathish: So I just want to share a personal anecdote with you here, Neelkanth. I once was in Surat because when you talk about MSMEs, you can glorify them. You can, make them abstract. So I actually walked and met with a lot of MSMEs and there was this Master Ji I met, he had these white shirts, white pants, they had five women working in a small office.

[00:14:08] Rathish: And it was a big car, a BMW. And then a bunch of people were walking out as I was walking in, and I asked him, "*Kaun The?"* (Who was he?) He said, "*Export Order tha*". (It was an export order). I asked, "Did he say yes?" He said, " "No. *Mujhe Nahi Karna Hai* (I don't want to do it) and I said, "*Kyun Nahi Karna Hai*?" Why? And he was in some sense saying that, I know what you're gonna tell me about growth and all of this.

[00:14:27] Rathish: This is the amount of risk I'm willing to take. These five women are the people I know who are skilled. I take that order. I'll have to have 20 people. They won't know their job. I have to take a loan. I don't wanna take all of that. "*Jhanjhat hai mera, mujhe nahi karna*" (It is a hassle, I don't want to do it).

[00:14:41]Rathish: And sometimes we assume that capital is the problem. He says, listen, I don't want to take that additional risk because all of the other enabling factors that are necessary for me to grow, he says may not be actually available.

[00:14:53] Rathish: So for me, when you see that, I think, it is multiple things coming together. It's compliance, talent etc.

[00:14:57]Neelkanth: That's a very nice example, and it's a very common one so in fact they have been surveys that the government has conducted to understand why firms have remained informal and, so there are a few who of course say that we don't get capital, we can't grow. But there are many who say, they are actually becoming formal involves or becoming larger than this involves a lot of headaches that we won't want to expose ourselves.

[00:15:23]Rathish: Just hypothetically, Neelkanth today, you know, in an early episode we did with Bindu Ananth, she surmised that out of a 100% of MSMEs, 90% of them, she said, were distressed entrepreneurs, which is, I have nothing else to do, so I'm running an enterprise. I don't want to grow it, et cetera.

[00:15:41] Rathish: 10% are probably the ones that are trying to grow. Fast forward to 2047, we're still going to have those entrepreneurs, but what would you say is an ideal mix of distressed entrepreneurs, small but growing, medium enterprises, and those that are becoming larger? What should be an ideal sort of balance that we should look at?

[00:16:00]Neelkanth: So frankly I think it's very hard to arrive at that numbers. India is very unique, in the sense that we are 17% of our population. We are trying to grow, very rapidly. In an environment where there is a lot of automation, in order to be able to be competitive with the global, best quality manufacturers, we'll have to automate as well.

[00:16:27] Neelkanth: Maybe what we will end up with is, a lot more of services than manufacturing industry and when you're talking about services, you can create models where you actually have, People working for themselves and you know, doing jobs or multitasking and doing, know, half a day here, half of the day.

[00:16:47] Neelkanth: So there are different models of work. If you remember, things like Swiggy and Zomato started coming up, and even during COVID where, people were even without informing their firms, trying to moonlight. See these types of options will, I think, become much more common, if you think about, for example, say tourism was to become a very large part of, India's economy and it should, right?

[00:17:12] Neelkanth: There's no reason why it shouldn't be, perhaps as large as it is in Europe or Singapore. Those are, that's an industry which very naturally, adapts to small and medium enterprises, right? So I think the right mix of what should be micro, what should be small, what should be medium is hard to say.

[00:17:30] Neelkanth: But I do definitely think that, we will need and we will see companies growing naturally. And I tend to agree with you that a very large number of. People will say that this is enough for me. I don't have more ambition to grow, that's not how humanity has grown to this population size.

[00:17:51] Neelkanth: This is not how and we, you know, in India, we've had communities. Someone was showing me the percentage of Indians with surnames in the bracket, there's some, I think, 1, 300 people with more than 10, 000 crores of net worth. And, so we have, and you see that and you realize that, you know, at least in this area, caste system, does seem to show up, right?

[00:18:18] Neelkanth: So there are natural communities of business folks, who are, who are wired for risk taking, right? And that's how, any society works, right? So there will be people who like to read and write. There are people who want to take business risks. I don't think we'll be short of entrepreneurs, but what we can do as we go about shaping the policies that can speed up our growth or at least sustain our growth for 25 years, we need to think about, providing an environment like, it's like, in a garden or in a forest that, there are no artificial hindrances to growth.

[00:18:55] Neelkanth: That there is enough sunlight, there is enough water, there is enough, fertilizer and so what is it for firms, and how can we, speed up that process, ease that process. So I think that's extremely important, and statistically there will always be a certain number of entrepreneurs who will appear in any society.

[00:19:17]Rathish: We always use the word ecosystem in a very abstract way. You know, and you'll I think you, I love your visual metaphor of an actual ecosystem, foliage, plants, forest, etc. And the point you're making is very valid. We can't aim and shoot to create scalable MSMEs. We can create a thriving environment so that at least external risks for them to emerge, happen.

[00:19:38]Neelkanth: Absolutely. And you know, so ecosystem wise, you know , what's also important is that, see, we had the last enterprise survey in 2013-14, we had a 7. 2 crore enterprise, right? And these are 7. 2 crore non-agriculture enterprises. And so when you're thinking about how to make them grow, you cannot pinpoint, right?

[00:19:59]]Neelkanth: So what you can do is create an environment where, there are too many of them and you cannot handhold or identify, oh, these are going to be the winners. You create an environment and then the right ones with the right amount of luck will start

[00:20:16]Rathish: So, moving on Neelkanth, one question that I wanted to pick on from the conversation we had right now about the enabling environment is the access to capital. I think we have in the past focused actively only on credit, but that know, as you rightly highlighted. Capital access is a much larger problem.

[00:20:32] Rathish: If you can lay the land for us in terms of where are we with respect to enabling access to capital to MSMEs today, what are some of the teething issues that we have at India level that we need to solve for?

[00:20:47] Neelkanth: So as you know, there are two forms of capital. Equity capital and debt capital. And of course there are people who try to create mixtures of both and call it more creative names. But basically there is equity capital, there is debt capital. Debt capital is relatively much safer for the provider of capital because then you are at least, you have some guarantee of return, and you get a guaranteed return on top of that and in equity capital, in theory, you can get nothing, but then you get profit participation. So it's riskier, but, but higher reward potentially. And so what, happens in any economy, which is at our current stage of per capita wealth is that risk capital is in scarcity.

[00:21:31] Neelkanth: So there are challenges with you know, when, when people save for the first time, their objective is to, save for their kid's education or buy a house or whatever. And so they are much more comfortable putting money into fixed deposits or fixed maturity products or debt funds and all that.

[00:21:54] Neelkanth: They're more averse to putting it into equities. Even within equity, that is the risk capital, you know, being able to, Invest outside of say a mutual fund, in a direct equity investment is actually much more challenging. And so, I call it a plumbing problem in the sense that there are, there is enough wells and at least among the rich people, In any country and including ours now, especially. Where, if you put an allocate a portion of that into giving it in small chunks to entrepreneurs, it should suffice for, sufficient amount of risk taking. This tends to be I would say a virtuous cycle in the sense that some of the entrepreneurs who started off in the early two thousands and by late two thousands, by 2017, 18, some of them had some exits.

[00:22:52] Neelkanth: They had their own wealth. They know the ecosystem, so they're much more comfortable investing in it. And then they start putting in that a few hundred thousand dollars, half a million dollars as angel investing or seed capital. And so what has happened because of that, because of the bull run that we saw in private funding globally in the last five, six years, almost by the force of capital, you can almost visualize plumbing channels have been created.

[00:23:19] Neelkanth: So every large Indian city has angel investing clubs. And what these clubs provide is not just the right marketplace for investors and entrepreneurs to get together, but also help and advise in structuring the contracts, making the paperwork proper so that it's not money that people can run away take the money and run away.

[00:23:45] Neelkanth: So all of those things happen. So I think we have started to solve for this problem. Remember that this problem has existed, In, in every single economy. Entrepreneurs and venture capitalists have existed for hundreds if not thousands of years, right? So the first the sailors the Vasco da Gama and the Columbus of the world, they were also entrepreneurs and they were funded by venture capitalist Kings or nobles.

[00:24:15] Neelkanth: So they've existed, in this current form, where you form a company You take on a risky idea and you implement it. If you read that book, Power Law, which talks about how even in Silicon Valley in the first few years because the government at that time was trying to solve for the problem that the banks attracted savings from small firms and small individuals and households, but did not have the capability of giving that loan to small businesses.

[00:24:48] Neelkanth: So it was naturally causing inequality and it was slowing down growth. So how do we solve for that? So they started with these, small business investment funds. And so the government would lend money to them at 5% and then they would invest in equity and all that. But anyway, so that was the point at which venture capital industry started off.

[00:25:08] Neelkanth: And that tells you that even in developed markets like the US and UK, this is a problem that has only recently started to get addressed. Over the last 10, 15 years, I think India has made rapid strides, along this front and more than just the clubs, I think the culture of taking a stake in a private firm when we do insider trading or PA trading policies, even in banks like mine; now there is a discussion on whether we should allow private investments or not.

[00:25:39] Neelkanth: So this kind of thinking just didn't exist 20 years back or 10 years back. So it's actually a very important move forward. I'm not saying that this is. This is done yet. But what, what this does, and as I was saying earlier, it's almost a virtuous spiral, right? So the, some of the entrepreneurs who make a lot of money with this, then they become very early stage investors in the next round of startups.

[00:26:03] Neelkanth: But yeah, but then there is a next so you need to be able to invest in really small ticket sizes, 50, 000, a 100,000 dollars, so these micro firms, can do proof of concept and start raising pre series A or series A funds.

[00:26:22]Rathish: I want to build on that discussion and stay with the equity part for a bit before we go into credit. And I want to break down MSMEs largely into three groups. You know, for my understanding, one is, it's not going to grow significantly. They probably have a shop, the shop might get a little bigger.

[00:26:38] Rathish: They might have a larger inventory, but that's it. That's how far they're going to grow. Very low risk, very low reward. And at the other extreme is really our hyperscale startups, things that actually can go public and create maximum value. You know, the Zomatoes of the world. And then there is what is in the middle, which is a small and growing business for me, which is the business that will actually grow will make crorepaties of the proprietor, et cetera. But it's never going to have like run that let's say a Zomato or a Swiggy will have. When we overlay the access to equity capital across this,I think the systems as you have highlighted for the hyperscale startups is already starting to emerge.

[00:27:17] Rathish: There is willingness to put that money. There is an ecosystem that is advising them, managing that, etc. Today, for the small and growing business where there can be a Crorepati proprietor, do we have the right infrastructure in India today, the right plumbing today, to use your words, to enable equity access to those entrepreneurs?

[00:27:37]Neelkanth: The way you framed the question is excellent that, you know, there is this middle run, which, of course needs a lot of capital. And, so is there enough opportunity for, or at least enough capital available. And now there is the plumbing there for this. I would say that we have made some progress, but I think there is a lot more that needs to happen. So for example, I think, till recently, even the taxation systems, were a deterrent, in the sense that, some rules would suggest that, that if you raised money at a higher value than for some firms, the tax guys wanted to treat that as a capital gains and therefore want to start claiming taxes on that. So there are things that we still need to change. And I think the, again the ecosystem approach in the sense that we don't just think about, you know, maybe 2000 or 1000 venture capitalist firms, which are going into small cities and small towns and, starting to find… instead if we allow for you know, a small business owner in a or a reasonably rich household in a, in a mufasil town to actually catch hold of a smart young entrepreneur and say, okay, I'll take 20 % stake in your firm but why don't you go ahead and build this and make it easy from a legal perspective, from an accounting perspective, from a taxation perspective. I think because culturally that situation is starting to emerge, right?

[00:29:20] Neelkanth: I think another point at which India is very different or India's growth paths is going to be very different from what other countries have taken at this stage of development is that the information and knowledge is now much more widely available. Even if you are in a small town, you're still, I know there's a certain category of people who will have the capital.

[00:29:44] Neelkanth: So you are still watching succession. Able to watch Silicon Valley. You are able to see YouTube videos. How these, this wealth is created, how small businesses scale up. So that information is available. It is not your small farmer who's going to have the wealth to invest anyways. So awareness of how to do it is, I think there, I think the convenience and the ease with which this can be done is something that perhaps we need to work on.

[00:30:12] Rathish: Thank you, Neelkanth. And I want to shift now, maybe to the debt side of the story. Same three categories. I think the dwarf entrepreneur today needs debt capital. So does the, you know, the small and growing business. In some sense there, the challenge is probably even more of plumbing, I feel, because the cost of transaction to provide that loan is much harder. The demand is need is higher. Tell us about it as well.

[00:30:39]Neelkanth: Yeah. So there are three parts to this, right? So when you think about the cost of debt, right? So the cost at which, a loan is issued. So why is it that a very large reasonably well capitalized industry or a large business group will get loans at 7 % or 8%, but a small business in a remote town in a slightly risky, business area, could be getting loans at 24%.

[00:31:06] Neelkanth: And if he's taking informal credit, it could be a hundred %, a year. And the reasons are, can be boiled down into three parts, right? The first is what is the business risk, right? So what is the credit worthiness? So if it's a riskier business, the lender then tax on the so the credit cost, the risk element is then bumped up.

[00:31:29] Neelkanth: So the credit risk in a large firm in an established business in a steady state would have very low risk. In fact, there are some corporates in the U. S. which could actually be borrowing at lower rates than even the sovereign. So that happens even, in most economies. But the moment it's a smaller business, of course, it's like a fledgling, a small sapling and therefore the risk of failing is very high and therefore you want to add on the credit cost.

[00:31:57] Neelkanth: The second is the cost of evaluation. So it could be a very risky business, but if you are say giving a hundred crore rupee loan, you can get, maybe five chartered accountants to go and sit at the factory, spend two months. Okay. And do a very thorough evaluation of all the books of accounts, all the land records all the liabilities and everything else. And then say that, yeah, now I can, now you say the cost of that evaluation is say for argument's sake, 10 lakhs, It is still 0. 1%, of the cost of the loan, right? If it's a 100 crore loan, 10 lakhs is 0. 1%. However, if, you're giving a one lakh rupee loan, there's no way that you can get even one chartered accountant to spend so much time on it.

[00:32:41] Neelkanth: So if the time cost or the time taken in terms of person hours is so much that it costs 10, 000 rupees to evaluate the loan or 5, 000 rupees to evaluate the loan, 5 to 10 % is then straight away tacked on to the cost of because that cost has to be recovered. Okay. The third element here is the cost of collection. Collection costs in many of the, microfinance firms can be as high as 7 to 8 % because remember that if it is cash based collection in particular, You have a person going around manually and collecting those 500 rupee, 1000 rupee, installments.

[00:33:26] Neelkanth: And if it has to be done, say 30 times or 20 times or 12 times the cost kind of adds up. So if you add all of these costs the credit risk, the cost of evaluation and the cost of collection, and then you add to that the general normal cost of funds and the profits that some of these firms would want to make, then automatically it's very hard to then get loan.

[00:33:53] Neelkanth: If it's a very small firm, in a remote area, in a risky business. then the cost of debt becomes 25, 30%. Of course, 24% is the peak, but, in theory it can be. And so then at 30% cost of debt, maybe the business doesn't survive. It's one of those one of those things where economic cost of that loan itself is so high that it's unviable. And therefore the business remains small. So if you want to solve for that problem, you need to bring down all of these costs. So the perceived credit risk, the cost of evaluation and the cost of collection.

[00:34:32]Rathish: I want to shift to the digital public infrastructure story and you know how that will solve for it. But before I do that, this is a problem most countries would have had to solve for. They did not have DPI. How did they solve for this challenge in some sense? Because some of what you're saying, you're in a large country like China will have the same disperse geographies, risky businesses, et cetera. And you said 60% is MSME. How did in the past emerging economies actually solve for this challenge?

[00:35:02] Neelkanth: So as I said earlier, the developed countries did it at the one that they grew over 200 years. They don't need these pools of capital. They grew over time and, You know, and they did not have the hurry because see one of the also, that India has to face is. Is that the demographic transition is actually even faster than economic growth. So that kind of shrinks the window that you have to grow. And so there is a sense of urgency. Those things again, because of the way healthcare reward, the way fertility work and all of that took its own sweet time. So the situation in the developed world, because remember that when you do research on MSME funding, you will find that the UK and the US face the same problems as we do, right?

[00:35:51] Neelkanth: So because the risk of credit worth or the cost of risk, the cost of evaluation, the cost of collection are more or less the same, right? So those problems are more or less the same across the economy. The reason why they, the way they solved for this was that they did it slowly over a very long period.

[00:36:12] Neelkanth: In China's case, it was a classic case of socialized risk and privatized gains. Basically, you get into active financial depression; you force very low savings rates on depositors and, you allow banks to make four or 5 % net interest margins. If some of the loans go bad, then, you so then there's enough buffer for them to absorb it. And if some entrepreneur so that's how the risk gets socialized. So everyone is paying for it. They do not directly, but indirectly. And if the entrepreneur's business succeeds and he becomes a, he or she becomes a billionaire, that's their game, right? So that's how it worked. And here the state was was very deeply involved.

[00:37:06] Neelkanth: So because it was a communist party all the way, remember that. In China to a large extent, all the surpluses rolled up to the central government in Beijing. So they were, they were companies, but effectively. Everything was state owned, right? So all of this, so the every company was effectively a part of the government maybe a department of the government or whatever.

[00:37:36] Neelkanth: And whatever business they did, the money rolled up to the center. And then the center then allocated the capital. It was in, in the early nineties that, they actually formed companies out of them and said that, look, you don't need to send us money. And so suddenly the receipts at the central government level went down from some 30% plus to 11 or 12% and then they had to impose new taxes.

[00:37:58] Neelkanth: So they've gone through. So their business model or their economic model is actually fascinating how they transition from where something where everything was state owned to creating private enterprise, to, to allowing companies to form. What the bank, banks did not know credit allocation because bank's role was only to process payments.

[00:38:18] Neelkanth: Because in this whole ecosystem, the way the Chinese economy was structured, there was no role for credit. So it was a very different, way that they approached it because of the way they're organized economically and socially. Unfortunately, we don't, or fortunately, we don't have that kind of a structure. So we need to solve for this and there are many ways in which I think we can approach this problem and I must say, and as some of the earlier podcasts that you've done and I've heard some of them, I think we have some very innovative ways in which we are starting to solve this problem.

[00:38:56]Rathish: Firstly, I just want to acknowledge that listening to you speak just underlines to me the unique position that India is in right now. You said the demographic window is a short one. Our growth has to be accelerated. We are the size of multiple countries together in some form and we have to keep them sustaining this growth. Oftentimes when you stand outside and complain about the traffic, you might miss the extent of the challenge that we are solving for as a country. The Asian tigers, not class large as India sizeable countries, but not as much.

[00:39:30] Rathish: Significantly high growth, maybe over a period of time, You know, South Korea, some parts of Southeast Asia. Are there any lessons from there that we can learn other things that they did? I'm also looking at what Bangladesh is going through right now, but definitely not comparable in terms of extent of growth for us. But just wanted to get your thoughts on that as well, because I know you've spent a lot of time looking at Asia, largely as well.

[00:39:51]Neelkanth: Yeah. So, you see, remember that a lot of the big changes that happened in Korea, Taiwan happened when they were dictatorships, right? And, the Zaibatsu's are at least in the industrial conglomerates in Japan had a very unique structure in the sense that, or even the Chaebols in Korea, right?

[00:40:13] Neelkanth: That they were large business groups and they had their own financing arms. This is something that as China was starting to debate its own structure as to what. It should adopt it. It studied those business models and then decided to not copy them. So they actually created large banks, which were actually departments of the ministry of finance.

[00:40:32] Neelkanth: They converted that into construction, China, construction bank of China, and so on and so forth. The so the way that the Koreans and the Japanese, and maybe even the Taiwanese went about it, one, a large part of that development happened When they were, when they were dictatorships. Meaning that Hyundai, which is a very successful car company, was a loss making company for 28 years. So they started investing in it in 1965, it was loss making till 1993. Try doing that in a democracy. You can, we did that for some of these firms for a while, but it's not sustainable, right?

[00:41:14] Neelkanth: Or the kind of subsidies that say a Samsung got from being, manufacturing, rice cookers and all of that to actually investing in semiconductors. So the approach they have taken is to create large firms which are globally competitive, then they carry along, as I said, a flotilla of smaller firms.

[00:41:37] Neelkanth: So the flow comes from the fact that Samsung become super dominant in chips. And so as those wafers are, as are etched and cut and diced and packaged, there's a whole, like hundreds if not thousands of companies, which then emerge to provide water to Samsung, to gas, to Samsung, to equipment, to Samsung, to you know, so a whole range of things that you need to run a company like that.

[00:42:03] Neelkanth: And same for electronics. As and they have also invested. So remember that none of this comes without risk. We remember the 2000 Olympics Samson, that was Samson's coming out moment, right? So within 10 years there, and they wanted to build a global brand. And then as they started to dominate global supply of televisions and electronics that allowed us a lot of small companies to, so that's how I think some of these forms.

[00:42:29] Neelkanth: And so these were and they are smaller countries. So it is possible to have a very active industrial policy where the government directly intervenes. It, it chooses champions there is a very natural risk of corruption when that happens. And so this choosing of champions and giving them a lot of capital, allowing them access to a lot of credit was part of the reason why the Asian financial crisis happened.

[00:42:56] Neelkanth: Because all of these financial risks we're building up. None of these models is risk free so you can today for example choose some firms to become the champions for India. But the one risk then you run is the political backlash because there is there'll be charges of pure capitalism.

[00:43:16] Neelkanth: And this whole model of socialized losses and privatized gains with China adopted is something that again, doesn't work. Because that's exactly why we got into the trouble that we did in the bad loans crisis that happened between 2012 and 2018- 19. When all of the excessive lending from 2006 to 2012 a large part of it was booked as losses. And that was while some from a, so when we look back a hundred years later we'll say that, Oh, this was the cost of the, so economic cycles are a given, some bad dates will happen. You invest a lot of money, you grow a lot, right? But you build so many power plants. Some of them go bad, that's fine.

[00:44:00] Neelkanth: Now it is okay in hindsight, it is okay when you're a macroeconomist, when you're running a country and you're a politician and there are people who have to be held responsible, then these things are not acceptable. So in many ways, again, the model that we adopt has to be very specific to what India can do.

[00:44:21]Rathish: Thank you. And I think this is a very good overview because in the, and in the light of this, and I think the point of what you said is important, I think finding a silver bullet is going to be a fraud exercise. I think we are, it's a question of tradeoffs. What tradeoffs are we okay to take? And what is our social climate?

[00:44:38] Rathish: What is our economic and political climate? And what is our size and what is fit for purpose for India? I think is a very difficult choice to make. It brings me to the question, what should India do and what is India already doing to solve for the question that we talked about earlier, both in terms of access to credit and the debt question that we had and then the equity question.

[00:44:57]Neelkanth: Yeah. So one of the big advantages we have is that we can allow or we can get technology to, to supplement the powers or the access of the state in the sense that earlier transmitting information or even monitoring or supervising or you know, so that the availability of data, the availability of communication channels, all of that was fairly constrained and limited.

[00:45:24] Neelkanth: So there was a natural lag and that created its own issues. The advantage we have now is because of what global, technology development has done that we have cheap smartphones. We have cheap data. Remember that till we were starting, we seem to have 15 years back, this was a very common complaint that, when all telecom and terrestrial lines, it was a nightmare for us, right? Because we just couldn't get it up and running.

[00:45:53] Neelkanth: It was when 4G came and large amounts of data could be transmitted wirelessly. Or even what's happening with fixed wireless access, the FWA in 5G, where you can get very high quality broadband connectivity in small areas. So these technologies have allowed us and these are all developed outside. Of course, we have, but we have been very smart and adopting them for domestic use. And so there is cheap data, there is almost universal data. And of course we have AADHAAR which has brought down the issues of trust and identity and the cost of proving trust and identity dramatically.

[00:46:32] Neelkanth: And so in this environment we can go about solving some of these problems in a very creative and different way. So for example, if you take important things like so access to capital is of course, Oaken and, the account aggregator and, database lending and FinTech models and all of that but there is also market access. If your if your market if you say a small say handloom company. In fact, I remember when I was growing up in Bokaro, I went from, which is very close to the Bengal border. And there used to be this distributor who came with taant sarees, right?

[00:47:07] Neelkanth: Taant is a certain type of fabric. So that taant sarees are very popular. In and around where I live and now, and so earlier it was dependent on that particular person going to that tribal village and then getting those sarees for cheap and then selling them individually.

[00:47:32] Neelkanth: Now that we were in theory can have access to the whole world. And because there are logistics providers, there are and now with with you can actually get credit based on a lot of the transaction volumes that you generated. I think the access to market problem has been started to get solved in many cases.

[00:47:43] Neelkanth: In fact, some of these small vendors need not even be companies. And so long as the tax authorities look the other way, some of them can actually scale up as well. I was talking to someone just now on how credit can be built on top of ONDC in the sense that if a vendor can if a vendor needs access to say 50, 000 or 1 lakh rupees they can just in theory, it's right now in early stages, but it is possible to seek credit.

[00:48:14] Neelkanth: And then all the financial system partners can start offering competitive rates for that credit. And access to credit then gets very simple. You can, if you want to buy insurance, that is possible. If you want to buy or if you want to just access a very different part of the market, a different geography you can do that. By doing this, we allow some of these businesses to scale faster than they would have if these systems did not exist.

[00:48:43]Rathish: Yeah, I fully agree. And I think if the fundamental premises of discovery and fulfillment, you can discover and fulfill loans, you can discover and fulfill insurance, you can discover and fulfill saris, and as you were speaking, I was realizing, when I was growing up, I once, had a chief guest in my school who talked about what he called the pin code curse.

[00:49:02]]Rathish: He said, and I come from a suburban part of Chennai. He said, you just have to realize that you have a pin code curse. You're not going to get the same benefits as people who are in. I'm like, wow, that's not an optimistic argument, but listening to you talk, like that, sari seller is off the pin code curse at the moment, irrespective of where he is or she is.

[00:49:21]]Rathish: I think there's an opportunity, so much farther, and which is a huge Phillip to grow. Cool. We've already done episodes in the past on Nilkan. So I want to jump into some of the nuances further. I think the promise of digital public infrastructure is significant, but I wanted to ask you, or I've been playing in my mind, three questions around what will truly unlock the value.

[00:49:46]]Rathish: One really is, formalization. You know, we have a still a largely informal sort of an MSME ecosystem. Now the digital trail in some sense, a superseded formalization, like even for somebody who's just a coconut seller today, we might have a digital trail, but how critical is formalization towards unlocking the true value of MSMEs, you know.

[00:50:09]]Rathish: And is that related? And how is that related to some of what we're seeing in the digital public infrastructure space? That is one question. Maybe I'll just lay out the two questions. Then you can maybe there's a combined answer. The second question really is apart from let's say UPI, private sector participation in innovating on top of some of what we are creating now in terms of work and so on is still limited as far as my understanding goes.

[00:50:33]]Rathish: Even within Aadhaar, while we talk about the geo moment, there have been many geo moments haven't happened as much, so private sector adoption of DPI and you have an inside view of this given your role in Aadhaar as well. So I'd love to hear. Is that still something that is not as much as the promise highlights to us, in terms of the credit infrastructure and people innovating on top of it today.

[00:50:55]]Rathish: And the third is the last mile access continue to be a problem for us or do you think that the digital access problem in some sense is solved for when it comes to credit taxes and so on for folks? So three questions. One is around formalization. Second is around private sector innovation. Third is around the last mile gaps in digitalization to enable credit.

[00:51:15]Neelkanth: Let's take the first one first. Formalization is it comes with a certain cost, right? So for example there's a cost to keeping accounts. You need to pay an accountant to, File your taxes to get your GST sorted out. Otherwise you'll get slammed with a bill and unpaid GST and all that. There is a cost to the, I suppose you are running a small restaurant getting the the food safety audit done. And there are formal and informal costs of doing that. And the issue is that when you are just too small to survive, right? So when, as you had also talked about earlier, there are businesses which are, which have been formed out of desperation. They didn't have anything to do. So they opened up a shop. I mean, the desire is not to really, make accounts and start to grow.

[00:52:10] Neelkanth: But as per capita incomes grow beyond a certain point, those costs become affordable in the sense that if your annual turnover is one lakh rupees, then paying Say two or three thousand rupees to a tax accountant to file your returns is not going to be very feasible, but the moment over a period of time, it becomes five lakh rupees and you have innovative firms which are using digitization to, create accounts out of some or other tax filings out of some small account.

[00:52:44] Neelkanth: So then the cost of compliance itself starts to fall and then, there are a lot of merits that come out of it in the sense that then naturally you get more credibility. So your customers start paying you more respect, bigger suppliers start treating you with more respect, you become eligible for more credit.

[00:53:05] Neelkanth: So a lot of those things start to happen and there is a natural progression towards formalization which is well underway. It can be accelerated by the digital trail thing that we talked about that even a small coconut seller is now getting paid formally and digitally.

[00:53:23] Neelkanth: And it's that classic panopticon problem, right? If you see that, the problem situation where if you think that the government is looking at all your transactions. And might as well over a period of time, start filing returns as well. So that's the process. And then you, and you register yourself and then you hear from your cousin or some other business partner that, Oh, that guy got formalized or, so he got registered as a company and now he's eligible for loans.

[00:53:47] Neelkanth: Why don't I do that? And then it's like traffic, right? So if more than 50 % of people start following traffic rules and everyone starts to follow traffic rules. Okay. It goes on its own parabolic curve. So I do think that the situation we have right now is ripe for an acceleration in formalization in the sense that we have the cost of formalization falling as a and as a percentage of revenue, as a percentage of profits, the cost of formalization is falling even faster because all of these firms are also getting bigger.

[00:54:17] Neelkanth: And of course, third is that there is the fear of that panopticon effect that the government now can see what you're doing. So might as well turn formal. The second part, I think it is not just the geo effect, right? Financial firms benefiting dramatically one of the reasons that these retail brokerage accounts have exploded, in fact, even in remote parts of the country. Is that the KYC cost has collapsed. Non banking finance companies, which are which are trying to do EKYC because in remote areas, it is so much, it reduces costs dramatically that the client on boarding the or even the cost of collections, if you're linked the bank account and it's all kosher and it's validated.

[00:55:04] Neelkanth: Then the cost of operating a loan actually comes down. But I would agree that outside of telecom and fintech there is, or finance, or like banks actually use a lot of Aadhaar as well for authentication. But outside of that, I think private sector participation has been quite limited.

[00:55:24] Neelkanth: But you can think of many use cases where and I think, frankly, we now need to build those innovative solutions. So there is a lot of data that exists, for example, in the new digital privacy law where a firm say an Internet service provider needs to build confirm whether the person using it is a minor or not.

[00:55:51] Neelkanth: And if that he or she is a minor, then it's their parental consent or not. Now things like Aadhaar can provide that, meaning that, you allow for the authentication to happen once and you provide a token, which then they can verify every time. And you can even attach features like, you know, parental consent, whether that token exists or not.

[00:56:10] Neelkanth: So there are many creative solutions that can be built on top of what we have. Frankly, it is now up to Aadhaar to start to create those solutions and further help the citizen into availing of these services and availing them in a very safe manner.

[00:56:32]Rathish: And lastly, the last mile access in terms of, is there still an exclusion risk that you feel is real in terms of enabling access to credit beyond moving beyond payments and so on?

[00:56:42]Neelkanth: Yeah. No, I think there is a long way to go, right? So the number of account or bank accounts linked to the account aggregator, the Sahamathi framework is of course still growing and it's actually very exciting, but the amount of, the number of loans being processed is still very small compared to what it should be. The kind of data that has been added is still a fraction of what ideally should be. Meaning, so far, it's only bank account data and some credit score data and, some of these things. But even basic things like tax data is not part of it. When it was envisioned even things like GST transactions or for argument's sake, ONDC transactions.

[00:57:23] Neelkanth: In theory, all of these should be available in the account aggregator framework because then that that allows you to allows the lender to see and assess credit and become much more secure. So even if someone is very credit worthy, but they can't prove it it becomes a challenge. So all of this has to be added up and without this data, I'm sure there are millions, if not tens of millions of businesses, which perhaps need the credit, but don't aren't aware that they can get it. And even if they're aware they can get it, they don't have the mechanism to get it because ifthey don't, all the records that they can show potentially to a lender aren't really being shown today.

[00:58:03] Neelkanth: On the physical access, I think that's been more or less sorted out, right? So I doubt that there are business owners or which. You will want a loan or which can take a loan and don't have a smartphone or don't have a mobile internet or don't have a bank account or don't have Aadhaar. So the basic physical infrastructure is sorted, but I think that the framework I think needs to run for several more years. Before we can say that it's now it can, it's running on its own momentum.

[00:58:34]Rathish: And if we were to look forward from here and think about what are some three or four, five things that you think we should double down on to make this access to capital problem, something that we can solve at scale, what would you suggest? One, as you rightly highlighted, access to data is one, just make a lot of these sources of data available for credit.

[00:58:57] Rathish:You know, even telecom data I'm sure is valuable to ONDC data, et cetera, but are there other priority areas that you think if we address it? We are able to have the ability to solve for the credit and the capital problem at scale?

[00:59:10]Neelkanth: I think so the first and foremost is what you said that the even the account aggregator framework, the quantum of data, the types of data that, that can be added on is to be much bigger, but more importantly, I think, the evaluation models so far, some of these models are being experimented on by small fintechs.

[00:59:31] Neelkanth: But the large amounts of data are inside somewhere else. So as we think about, the very fact that we are doing more transactions than US and China put together in terms of volumes, if not in terms of value yet, but digital transactions, what are we doing with that data?

[00:59:46] Neelkanth: And why can't we use that to train models, which can then be say, as, as again, public infrastructure leased out to lending firms, and then they start training those models. And, so that, that kind of thinking as to if all of these data exists in a way that, which protects the privacy of the data owner.

[01:00:09] Neelkanth: But which is actually the individual for whom the data is generated that system I think we let the market discover that it's going to take a very long time, whereas if there was a systemic framework which allowed for some of these things to train and then it throws out a new score to see what civil does or some of these credit rating agencies do is look at your outstanding loans, how up to date you are on those loans, how many loans you have outstanding and all of that and then give you a score. But there is no model which gives you a credit or a credit score equivalent on the cash flows that you have. So that visibility is limited and I think given that all of that data and all of that those transactions in GST etc exist.

[01:01:01] Neelkanth: Maybe this is another public infrastructure kind of a model that can be built on top of the existing infrastructure to accelerate that process of credit provision because those models will then be much smarter than the ones that, the FinTech started with 5,000, 2,000 rupee loans.

[01:01:19] Neelkanth: And some of them who have succeeded, it's like the ecosystem, right? So, You know, 500 firms entered, maybe 25 survived. And the 25 will survive their models are now proven so they can do 50,000 rupee loans But is that the fastest because the total outstanding loans for them are like 90,000 crores or 1 lakh or something like that How can we make that 20 lakh crores in a safe way?

[01:01:42] Neelkanth: So last thing we want is acceleration without quality control, but so can we accelerate that process and and so the regulator the RBI some of the banks the government , all of them perhaps need to get together and see while it is perfectly valid to be concerned about this growth in unsecured loans. But can we do something to make them safe and secure? So I think both of these like more data and perhaps some public models. could be ways forward to accelerate this process.

[01:02:11]Rathish: I think two things that strike me as you're speaking, Neelkanth. One is, this is a data abundance scenario that we have not been used to, so a lot of our systems are designed for data scarcity and a lot more credibility, etc. So I think building the mindset to work with data abundance is, I think, something we have to build at scale and experiment often.

[01:02:31]]Rathish: And second is this trade off, as you highlighted, we need to learn fast, but we need to safeguard for risks because this is people's lives that we're talking about. This is finally capital, and I think irresponsible runs might actually run much deeper than we want to. And I think those are not easy choices to make.

[01:02:46]]Rathish: In some sense, if I had to close on, what is your general mood on some of these right now? Are you cautiously optimistic? Are you vehemently pessimistic?

[01:02:56]Neelkanth: No, no. I'm not pessimistic at all. I think the way I see policymakers think, I think they're all being, they're all very progressive. They're all very excited. I can see the desire to make big changes. The success that India has had in DPI is being recognized the world over. The government now has a cell to promote DPI or Indian DPI to the rest of the world. The equivalent of Aadhaar, which is MOSIP is now being attempted in two different countries. So there is a lot of, I think, belief that this thing works and that you would have seen that these are models that have been replicated across sectors, like you know, even the E-Shiksha portal.

[01:03:45] Neelkanth: So the government is so convinced about this thing, this marketplace thing working that they're trying it in education that some school teacher is very creative so you or she uploads a good video of how to maybe explain Pythagoras theorem and then, you know, five other schools find that this video is the best and they pay for it.

[01:04:05] Neelkanth: Whatever. I think so far, so I am quite optimistic. I think the the capabilities of technology keep improving. And there we are still at early stages. In fact, many people are threatened by AI. I think where India is right now, we actually may benefit from AI in the sense that I believe some jobs will be threatened by AI, which is already happening, but, you know the reduction of unit costs, which are absolutely critical to increasing penetration.

[01:04:33] Neelkanth: You know, when Ford built the car so it effectively brought down the cost from 50- 55, 000 to some 15, 000 within a couple of years. And that meant that horses got wiped out and cars just came onto the scene. So how do we get unit cost down? And that's where I think AI and the massive progress it is making, is it gives us a lot of options. I'm very excited about this but we need to get things right. And I think nothing happens by itself. You need to have some intervention, to move it in the right direction.

[01:05:09]Rathish: Absolutely. Neelkanth, as I was talking to you today, I was thinking of the vantage point that you sit in. You had 20 years of watching India grow. You've had a view of the global markets and Asian markets. You are, you've seen, you're seeing the DPI growth, given your role at Aadhaar, and you also are part of policymaking conversations in state and center.

[01:05:29] Rathish: Thank you for giving us that range of experience in this conversation. For me, I had a kid in the candy store moment where I kept asking you questions from global markets to how do we look at DPI to credit and so on. To just summarize what we spoke about. A, the moment of reckoning for India is real.

[01:05:47] Rathish: There is a definite opportunity for growth. It's not a certainty, but there is a significant opportunity, but it's coming at a very unique position. We have a shrunken window to do this. We have to do it really fast, but do it responsibly. And we have to do it within the social political constraints that we have. Number one, number two, I think for that to happen, a rich foliage of MSMEs are critical because they enable the large trees and the big companies to grow and thrive. We talked about capital for MSMEs. We talked about equity and debt and, in both cases, building the right plumbing across the three types of MSMEs that is going to be important.

[01:06:25] Rathish: Building it has been a power challenge everybody has solved in different ways. And we talked about how China did it and Asia did it. We can't become a dictatorship. We can't prioritize gains and socialize risks. But technology gives us an opportunity to do this at scale. And I think the innovation of digital public infrastructure is probably the best use of being able to do that.

[01:06:46] Rathish: And you talked about how some aspects of the panopticon effect around formalization, et cetera, is enabling us. But I think the point that you made that we are in a data surplus culture. How do we build mindsets and experimentation models to leverage that, I think is going to be very critical. And much like you, Neelkanth, I'm also extremely optimistic. About where we are. It was a lovely conversation. Thank you so much for being with us for as long as you did.

[01:07:11]Neelkanth: Thank you, Rathish. Wonderfully summarized the conversation and some very insightful questions and really enjoyed the discussion. Thank you for having me on the show.

[01:07:22]Rathish: Thank you for listening to Decoding Impact, a Sattva Knowledge Institute production. I'm your host, Rathish Balakrishnan. If you've enjoyed today's episode, do check out some of our earlier podcasts around ONDC that we did with Sujith Nair, Digital Public Infrastructure with Pramod Varma, and other podcasts that we have done on Open Credit Enablement Network in Season 1 and Account Aggregator in Season 2.

[01:07:46] Rathish: There's a rich source of information on some of these that we weren't able to cover in today's episode. And if you like it, head on to our SKI website, where we have more information on digital public infrastructure and digital public goods in If you liked what you heard, head to YouTube or Spotify to listen to the season one and season two of Decoding Impact. I look forward to meeting you again in a fortnight for another episode of Decoding Impact. Thank you.