

**Alex:** Hello and welcome to this interview about the National Capital Region Transport Corporation in Delhi, India and the new Regional Rapid Transit System it is planning on building. My name is Alex Barron, from The Imperial College, London, I am an associate director of the Transport Strategy Centre and I lead metro and light rail benchmarking efforts across the world, including The Global Community of Metros, which is the world's metro benchmarking community, consisting of 42 existing rail systems in 39 cities globally, including the metro in Delhi. It has been one of the fastest-growing and impressive metro systems in the world. I'd like to give a very warm welcome to Mr. Vinay Kumar Singh, Managing Director of the NCRTC. Welcome Mr. Singh, would you like to introduce yourself please?

**VKS:** Thank you, Alex. I am Vinay Kumar Singh, presently I am looking after the National Capital Region Transport Corporation. This particular organization, which is implementing, the Regional Rapid Transit System in and across Delhi and covering a major portion of the national capital region. This particular system is a rail-based system and it is a fast rapid transit system, where trains (electrified trains) will be moving at a frequency of a 5 to 10 minutes and stations are equally spaced, almost like between 5-10 kilometre of distances, depending upon the present requirement of mobility.

**Alex:** Okay, thank you. I am looking forward to hearing more about the system and the plans you have. How is it been going in this crazy time as we talk? You mentioned a little bit about the project. Could you perhaps provide a little more description of the corridors and what the plans are about the current status?

**VKS:** Actually, when this project was envisaged by the planning commission of India, at that time, they envisaged eight corridors all across, radiating from the centre of Delhi, in all directions. But the government decided to prioritize three corridors for implementation in phase one. These three corridors constitute about 350/360 kilometres of new rail-based greenfield system, and we intend to have this system designed for 180 km per hour, giving an average speed of say about 90 to 100 km per hour, commercial speed for commuters and this is very densely populated area, Delhi and NCR, one of the largest metropolitan areas of the world.

You may be aware Alex, that by 2028, Delhi will be surpassing Tokyo and will become the most populated city on the planet. So, the challenge for us is to provide mobility and accessibility to people staying in this area, having a projected population of about 60 million by 2021. Quite a huge population in an area of about 40,000 square kilometers or so.

**Alex:** Thank you. Yeah, wow, that is going to be something else, this thing in the future and it's great that you are planning now this sort of public transport for all those people who are coming. So, I know in India in general and in Delhi there is a long legacy of railways, and very, sort of, well-known railways in some respect. How does the new system relate to the Indian Railways?

**VKS:** Yes, you are right, the Indian Railways is more than 150 years old, and Delhi is one of the very important hub of the National Railway system. A large number of trains either originate or terminate in Delhi, and we have four-five important stations/ directional terminals of Indian Railways in Delhi. Also, as you mentioned that Delhi Metro has 400 km of network, which has been developed in the last 20 years, but unfortunately, what has happened is, there are either National Railways or Delhi Metro that is within the city of Delhi. But the National Capital Region has developed in a high economic area, where there is a lot of economic activity happens, and population density is very high. But unfortunately, intercity transport is not adequate. I should rather say that it does not exist. Seamless transport is not there. So the buses which start from one particular state, they terminate in Delhi and then some other system will start and will go to some other city and ends in another. This system is quite disjointed. This particular strategic investment of the government of India and the four state governments, which are joining their hands in NCRTC. They decided to go for this kind of intercity system, which is now called the regional rapid transit system for NCR, and it will have seamless connectivity among the various cities of the region. So it is not city-specific or state-specific, but it is now connecting, seamlessly, the whole region. The importance of RRTS is to provide regional connectivity and commuter services so that people can come from their residential places to centres of economic activity and go back.

**Alex:** Okay, yeah, I think it is great because in my opinion at least, in many of the places of the world where metros are growing quickly, especially China, there is a bit of a gap, as you identified, between the sort of long-distance trains, which might be high speed in China and the metro, but that sort of regional, sub-urban space that we have, perhaps in Europe as sub-urban railways, the regional railways are not so developed as of yet, so it is great to see something exactly like that to fill that market. So tell me, fitting into the wider picture of mobility, I was wondering that the trains that you operate, is the idea that, it's the daily commuter and providing seats for those commuters, like a sort of comfortable, higher quality service or is it more about the volume? How do you envision it? How do you plan for it to work?

**VKS:** Thank you for this question, actually it gives me the opportunity to explain what we are strategizing. See, because these trains are covering longer distances, but at a higher speed, our thought is to provide a large number of seats as compared to Delhi Metro. So these trains will have more seating capacity, and these will be having transverse seating. But simultaneously, we are providing good space for standing passengers also, because many of them will be traveling for very small distances of 10-30 km and normally by these trains, a distance of 30 km will be covered in a time span of say, 20 minutes, which is not much. The train acceleration and de-acceleration are being designed in such a way that there won't be any jerk at that time, and the standing people don't feel this kind of discomfort which otherwise the National Railway system may have. So we are keeping in

view the comfort of the people who are sitting as well as who are standing. I must add a very important aspect, part of our mandate is to decongest the roads of the National Capital Region. That means that we have to bring back the people from cars to public transport. So we have introduced a business class on all the trains. All the trains will have at least one coach of business class, that will have comfortable, reclining seats. There will be special arrangements on the platform also, having some kind of additional facilities in that coach and at the platform.

Alex: Oh yeah, that's interesting, the new approach, I suppose in the National Capital Region. So you mentioned something about how the new system will integrate with the Indian Railways and the Delhi Metro. Could you tell me a little bit more about that in terms of where the RRTS will come together with the Delhi Metro? Do you expect e.g. a lot of the long-distance commuters would then take the Delhi Metro from those connecting hubs to their final destination or how do you envision that working?

VKS: Actually, multimodal integration is central to our planning. There are a total of 8 Delhi Metro lines, of which we are connecting to 7, in some cases into more than one station(s) on those lines. This connectivity would be seamless, and people can change through either overbridges or underpasses. So one can move seamlessly from one system to another. We will be having the common mobility cards for both the systems so that at that level also, there is integration. Beyond the Delhi Metro, we are also connecting to Metros in other cities such as Gurugram. A very interesting thing that we are doing in Meerut, the first RRTS corridor which we are constructing, when RRTS enters into Meerut city, then for a length of about 20 km, we will be operating the metro system on our infrastructure. So within that 20 km, there are additional metro stations. While the regional trains will be stopping at only four stations, the metro trains will be stopping at 13 stations. So these are two different types of rolling stock, but we are operating the whole system. Other than this, we are integrating the RRTS system with the Delhi airport, Inter-State Bus Terminus, with Indian Railway's two stations and a large number of bus stations all across three corridors. So this is a huge multimodal integration exercise that NCRTC is doing. We could bring stakeholders to the table and could convince them why it's a good idea to integrate all public transport systems. This is going to switch a large number of people from private vehicles to the public transport system. And I must say, we are quite successful in that.

Alex: That sounds really good, and something that's really going to establish the new backbone for the region. I was a little curious to mention the section where you will have metro trains as well as other long-distance trains, how is that going to work? Do you have multiple tracks for example, acting loops or things like that, how do you see that working?

VKS: You are right, we are providing passing loops at these metro stations, and the common stations will have no passing loops, so the timetable is being planned in a way so that we can operate both the services in this length of about 20 kilometers. We are seeing the simulations, and this can be done very successfully using the European Train Control

Systems Level 2 signalling system that we are implementing. That is helping us in planning the timetable in a way that will help us operate both the services simultaneously.

Alex: And I suppose obviously you are building all new infrastructure, you have the high-quality infrastructure, dedicated infrastructure so you can control all the aspects?

VKS: You may be aware that in the last 20 years or so, in India, with the advent of the Delhi Metro, and after that 12 more metro lines came in different cities of the country and highways, the civil engineering industries have grown and matured. So we have got very good consultants, contractors who can provide services to construct these modern and good quality infrastructures, the industry is geared up for that. Other than that, as far as signalling, traction, rolling stock is concerned, we have got capacity within the country which has been augmented by traditional firms, and in many cases, Indian companies are doing the work. I agree with you, we are able to provide cutting-edge technology in the system, we have got whatever is best in the world, we can provide almost at the same level. In some cases, we are doing things that have not been attempted earlier.

Alex: Well, I certainly can't come, wait, see the system, once its safe to travel and once it's finished. So, what's the current status, I know you mentioned the 1<sup>st</sup> corridor is under construction. What's the timeline, and what's coming next?

VKS: I would like to share with you, unlike Europe and the western world, the targets given to implementing agencies here are very stringent in India. These are not as good as China, but yes, as compared to the western world, these are very stringent. The first corridor that we are doing, the priority corridor that is to be commissioned within four years of the start of construction. Within the next 2.5 years, we will be commissioning the first 20 km of the line, and then, with every six months, we will be commissioning 20 km. In less than five years we will commission the 82 km of the Regional Rapid Transit System and the Meerut metro that will be consumed in the RRTS system.

Alex: So that's the first line and then what else is on the horizon? I know you have got a lot in planning, what's coming next?

VKS: Presently we are doing civil construction works, we are going for the detailed designing for systems on the first line, which as I told you will be completed by Mid of 2025. The second corridor has already been approved by the provincial governments and now it is under the sanction of the Government of India. In the meanwhile, we have tied up for the funding of the second corridor and pre-construction activities like utility diversions, tree cutting, high-tension lines, low tension lines, widening of roads, diverting utilities, so that when the contractors come, we can give them very clean sites to work quickly. The third corridor is at the stage of detailed planning and I hope that in the next year or so, we can start construction on that as well.

**Alex:** Oh, that's great, that's a lot to look forward to. So in terms of the construction going on right now, have there been any impacts from COVID-19?

**VKS:** This pandemic has affected the whole world. How can we be not impacted by that? It had been a bad time, yes, and there were periods of lockdown and when we were not able to come to the office, the labour was not able to work at the sites, but fortunately before COVID, we have shifted to a large number of technological interventions at NCRTC. We work in a common data environment, we have BIM designs, there is a lot of collaborations on IT and electronic platforms. As far as planning and the whole bidding process is on an electronic platform of the government of India, the correspondence with the stakeholders like contractors or the consultants, or funding agencies or the bidders are on electronic platforms. So, as far as planning, designing, procurement is concerned, absolutely we are on time. But in some cases, probably due to the stoppage of work at the site for a few months, that has impacted us. But we are sure that within the next six months, we will be able to recover that. The contractors have mobilized good numbers of labour and engineers. I am fully hopeful that we will be able to commission it before time.

**Alex:** Do you think there will be any long term changes? Not necessarily in terms of construction but the role of the system in the region given the pandemic, with people working from home or different volumes of commuters, or would you be back to the previous plans.

**VKS:** Certainly, there will be a lot of impact, infact in many cases, people thought that physical meetings can work. But during a pandemic and the lockdown, people have realized that a lot of the work can be done on video calls like we are doing right now. Otherwise, we would be in Madrid today, attending the conference, but now we understand that there is a method of doing it (virtually). So it is going to impact on a permanent basis, and it will affect the ridership on public transport systems but in Delhi or NCR, you are aware that we have a very high density of population and a large number of people. So practically in many cases, it is not possible to move that kind of numbers by road transport or private transport. So as far as NCR is concerned or RRTS or other rail-based systems in this area is concerned, I don't think there will be any dearth of numbers, because we are not able to fulfill the transport or mobility requirement of the region and inspite of the pandemic whatever impact it will have in terms of percentage of the numbers, whatever we are creating may not be adequate after 15-20 years. So certainly there will be an impact, but not on these public transport systems which are required badly.

**Alex:** Thank you, yeah, I have to agree that there is certainly a change right now, but the long-term trajectory of urbanization and the growth of places like Delhi is something we would like to continue seeing. So I think we have just a moment or two left, so maybe one final question which I wanted to ask, which is sort of about if you think about when the

system is operational, what do you think the main success factors will be, and how will you evaluate? So how will you know it has been a success?

**VKS:** See at NCRTC, since day one, we have been commuter centric and whenever we have a decision to make, we always think in terms of which decision will help us create more ridership. How probably we can provide the system to improve the ease of business, or to provide ease in mobility and accessibility. To my understanding, the success of the system will be, if we can move a large number of people on our system. Because that is the need of the region, and that is the idea behind investing in this system. The second important thing, which I feel is very, very important to make this system successful is, by this, we should be able to create new centres of economic activity. So stations around RRTS systems will be centres of economic activity, the moment they go into operation. People who want to remain in the CBD today will move outside, so there will be a kind of reverse migration from the centre of Delhi to these areas. So that people can stay in better houses, in healthier environments and decongest Delhi. So a lot of economic activity will get decentralized, and the development will be polycentric. That is what we are aiming at so that we can reduce congestion, pollution, provide ease of movement. If we are able to do these things, I think we will be successful in our objectives

**Alex:** Wow, thank you, that sounds great, and it's great to hear such well-connected plans. The fact that you have such a well-connected plan that sort of links in with these wider objectives- mobility, environmental improvement. For me at least that is what delivering good transport is all about so I have to say, congratulations on the progress so far and I wish you every success in the future, and I look forward to seeing you.

**VKS:** Thank you, in fact, we need a lot of wishes because what we can do is hard work and focus strategy, but wishes are required in this kind of project that is very complex and huge. Thank you, Alex!

**Alex.** Thank you so much for your time and looking forward to seeing you in Delhi someday.

**VKS:** Sure, sure. Thank you!