

Editor's Note

October was a busy month for infrastructure in the country. Prime Minister Narendra Modi inaugurated the long awaited Navi Mumbai airport and launched the Mumbai One transport app. The Supreme Court passed a critical judgment on road safety, giving credence to The Infravision Foundation's work on Vision Zero in collaboration with IIT Delhi and TIF Founder Vinayak Chatterjee's decades-long advocacy of a national transport safety authority.

PM gets vocal on unified transport authority

Prime Minister Narendra Modi has set the stage for establishing an apex Transport Planning Authority. He chaired a meeting of cabinet ministers and secretaries responsible for transport-related ministries, which will be tasked with detailed planning for the entire transportation ecosystem. For The Infravision Foundation, it was a ringing endorsement of the work it has focused on in 2025, developing a comprehensive and unified transport governance model and unlocking value in 20 metropolitan growth hubs in India.

Work on transport governance gets off the ground

InfraPandit Jury Meets

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Work on transport governance gets off the ground

Globally and in India, transport networks are expanding rapidly, multiplying connectivity benefits and reshaping urban development. Empirical evidence from the Golden Quadrilateral highways to the Delhi Metro illustrates both the positive multiplier effects and the risks of fragmented, uncoordinated growth. Despite massive investment, India's transport governance remains fragmented. Multiple ministries, state departments, parastatals, municipal corporations, and special-purpose agencies each manage pieces of the system, often with overlapping jurisdictions. This fragmentation leads to jurisdictional overlaps and weak coordination; duplicated investments and project delays due to lack of integrated planning; financial stress, with states frequently bearing disproportionate metro costs; and capacity constraints, as professional expertise in urban transport planning is limited. The Infravision Foundation (TIF) argues that governance must match the regional scale of transport demand. It proposes a dedicated Urban and Regional Transport Authority (URTG) as a nodal institution to:

Integrate transport with regional land-use and economic planning.

Harmonize investments across corridors, modes, and logistics nodes.

Coordinate multiple operators under common regulatory and fare frameworks.

Mobilize and manage finances through a dedicated Urban Transport Fund.

Oversee performance monitoring, multimodal integration, and digital innovations

The governance model is linked to India's vision of developing 20 metropolitan growth hubs. In a three-year initiative, TIF seeks to design and pilot future-ready institutional models for urban-regional transport governance to assess the need for dedicated regional transport institutions; draw lessons from existing UMTA experiences; propose institutional reforms for planning, financing, and regulation; design statutory/quasi-statutory governance models with legal mandates; build technical and institutional capacity in planning, PPPs, and digital systems; and deliver pilots on integrated ticketing, multimodal scheduling, and data-driven decision-making.

The scope aligns with NITI Aayog's growth hub framework, ensuring that governance models are inclusive, sustainable, safe, and economically productive.

The InfraPandit Awards: Jury meets to decide the winners

Ten shortlisted candidates, ten hours of intensive interviews over two days. The InfraPandit Awards jury interviewed ten doctorates from across India before selecting two winners who will be announced soon. Powered by the infrastructure behemoth L&T, the awards hope to strengthen the linkage between industry and academia. More on the awards next month.



Jury members Savita Mahajan, Prof G Raghuram, and Dr KP Krishnan

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The Urban Challenge Fund promises to be an interesting and innovative initiative in India's urbanization journey. In the latest edition of his monthly column in Business Standard TIF Founder and Managing Trustee Vinayak Chatterjee argues that the appropriate selection and professional execution of projects would determine its impact and success.

TIF CEO Jagan Shah chaired a panel on Smart Parking at the Traffic Infratech Expo. The panel comprised I.Jeyakumar, Member Secretary, Chennai Unified Metropolitan Transport Authority (CUMTA); Rahul Yadav, Deputy Chief Operations Strategy and Planning, Delhi Metro Rail Corporation; Ranu Sharma, Additional Commissioner of Police, Jaipur City; and Santhosh Kumar, Head of Park-Zeus at Bosch. The panellists shared their perspectives and experiences on policy, planning and revenue models in urban parking management.



TIF CEO Jagan Shah was at the University of Melbourne's Global Centre Delhi, chairing a session on Sustainable Infrastructure Development in a policy roundtable on Sustainable Economic Growth and Development: integrating growth, climate, mobility and equity.



TIF Advisor on Net Zero



India faces a dual imperative: sustain unusually strong GDP growth while delivering a credible path to Net-Zero by 2070. In a new essay, D.K. Sen (Whole-time Director, L&T; Member, Council of Advisors, TIF; leader on energy and infrastructure) laid out a practical road map – from realistic capacity targets to the missing pieces in storage, green hydrogen, and domestic manufacturing.

Key takeaways: Peak demand could reach 366 GW by 2031–32; India aims for 500 GW non-fossil capacity by 2030; storage and green hydrogen are strategic priorities; and financing the transition will require innovative blended capital (IEA estimates ~USD 160bn/yr to 2030). Read the full article: <https://lnkd.in/g4PqEcht>

TIF on High Speed Rail

TIF's work on High Speed Rail (HSR) was in focus in the media this month, coinciding with Prime Minister Narendra Modi's announcement in Japan of India's ambition to build a 7,000-kilometre HSR network, with significant portions to be developed under the Make in India initiative.

TIF Founder Vinayak Chatterjee spoke at length on HSR to Umesh Anand, editor of Civil Society, making a compelling case for why HSR isn't just about faster trains, it's about economic transformation. He said it had the potential to unlock ₹20 lakh crore in investments with a 3x multiplier effect; that it would attract premium customers who are willing to pay more to airlines and luxury buses; and it could become an example of Make in India.

The prestigious monthly magazine Infrastructure Today did a detailed report on HSR and its benefits, quoting Chatterjee, TIF Advisor G Raghuram and the author of the HSR report for TIF, rail expert TS Ramakrishnan.

<https://online.fliphtml5.com/xnwkg/ouuf/#p=1>

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Vinayak Chatterjee on linking cities, boosting economy

'High-speed rail is the big move India should be looking at now'



Vinayak Chatterjee. 'We are seeing customers willing to pay more for high-speed rail'

MORE Indians are flying than ever before. But in the process is an almost getting too clunky and businesslike? Perhaps it is time to balance the emphasis on flying with fast and efficient train services over short inter-regional distances.

An opportunity beckons in linking up cities big and small and in the process attracting investment in industries that might not otherwise level in these directions.

Some progress has already been made with the Vande Bharat trains. A bigger and calibrated push is in order. Dedicated railway corridors and superior technology could dramatically ease travel, speed up journeys, spur urbanization and join the dots that bring sizeable economic advantages.

Vinayak Chatterjee has for some time now been advocating high-speed rail services as the next big idea that Indian policy mandators must embrace. High-speed rail would be a substantial improvement over current services and a tenth or two below the bullet train. Preparations being made for the bullet train could easily be extended to ushering in high-speed rail.

Chatterjee has been an innovator in the infrastructure space for the longest time. For someone with large sums on his mind, he is also surprisingly inclusive and socially driven. Having built Feedback Ventures with friends and sold it off recently, he and his wife Ramjith, have co-founded the Infraction Foundation. Below is an edited version of a long and interesting conversation.

Q: You have put forward the view that high-speed rail is going to be a game changer for the Indian economy. Tell us three good reasons why. I think the most compelling economic reason — if you look back on countries in Europe and other countries that started high-speed rail perhaps two or three decades ago — is that their per capita GDP was close to where India is now. Japan, of course, started much earlier.

Therefore, there comes a time in a society and an economy when you have a larger section of people demanding better services. Not just, you know, electricity, tap water, cooking gas and all of that. The desire of society is to move up in terms of cheaper air connectivity, better utilities, public transport.

There is a national desire that our creaking railway system should address this need for faster and more comfortable travel. India's economic indices, its development aspirations, the aspirations of its people, its per capita income, all indicate we are now ready to start high-speed train services.

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Programme. Two, the switch to renewables.

Q: What has been the impact?

Both have transformed the Indian economy. Today, half of India's generating capacity is in renewables. Out of 400 gigawatts of our installed capacity, 200 gigawatts is renewable capacity, which is solar, wind, hydro.

This combination of highways and renewable energy has, in the past two decades, probably led to investments of around ₹100 lakh crore, which is no laughing matter. India investments of a magnitude of three and have galvanized the economy, according to my back of the envelope calculations, to the extent of maybe ₹300 lakh crore.

What is the next big idea that India has? To my mind, it is high-speed train. Seven corridors of around 700 kilometres each have been identified by the rail ministry. We, at Infraction Foundation, have prioritized four in our report. The point is that seven such corridors across 15 years have the capacity to galvanize about ₹20 lakh crore of investments with a three-times multiplier effect and create a huge number of jobs both in the laying of tracks and associated systems as well as in the indigenization of manufacture of all equipment from coaches to signalling to stations to safety. It's a massive programme that India can ill afford to turn its face away from.

Q: How long does it take for technology to sink through?

In my earlier years I was of the view that technology transfer takes time. I've been very pleasantly surprised for two reasons: the alacrity with which people in the railways designed the Vande Bharat train. I've travelled on the train myself from Delhi to Kanpur, and I can say it is 70 percent of what I would have expected from a Swiss or German train. It's completely indigenously built at one-eighth the cost at which foreign companies would have done it. And it didn't take long for our railway engineers, whom we criticize as being singley, to design and build it. The big picture is that the political class had confidence in them, empowered them, and we now have Vande Bharat.

My second point is there have been some issues with the Japanese because of the delay in the bullet train project. According to the perspective they had kind of offered the next version, which was far more expensive than what we had budgeted for. The government has actually placed the order for two bullet trains, with a joint venture of Bharat Earth Movers Ltd (BEML) and the Integral Coach Factory. A ₹727-crore order has been placed to this entity, two PSUs in partnership, to develop two bullet train rigs.

The fact is that we are almost there. Once the Japanese bullet trains come in, our guys are going to strip it down like the Chinese did decades ago. We have the scientists, we have the railway engineers, so I am far more sanguine about our ability to absorb technology in half a decade, be self-sufficient and start exporting at a reasonable cost to the developing world, to the African continent, and parts of Central Asia.

Q: How much are you being heard? What is the resonance with the government?

You know, to be honest, I am slightly perplexed. I am not getting a resounding yes. But it appears that the railway board or the railway establishment or even the political establishment has not yet announced publicly any intention of making high-speed or seven corridors of high-speed rail. I am not clear what is holding them back.

Three comes a time in economic history when a movement up the technology ladder becomes inevitable. Is it that the railway board mandarins are very comfortably set in their existing bubble of doing things incrementally? You know, thinking we will go a little better, we will do Vande Bharat, we will do station development, decongest, connect Kashi, connect the Northeast.

My hypothesis is that the political class has influenced the thinking of the railway board in two ways. One is regional connectivity. You would have seen a lot of capex going into connecting Kashmir, the Northeast and border areas, which is a politically correct decision.

The second is station redevelopment. A large portion of the travelling public is just fed up with the dire quality of our stations and is therefore moving to low-cost air services or Volvo coaches, etc. So station redevelopment seems a big item on the political agenda. It is also such and self-development, so it gets votes.

The third, I think, is let's spread the Vande Bharat butter across the Indian coast before we embark on high-speed rail. I'm not saying this thinking is illogical.

Look at the speed of train. The existing Indian railroads do about 120 kilometres per hour. The Vande Bharat is designed to do 160 kmph, but at peak it touches 128 or 130. It doesn't go faster because of the quality of tracks and because of lack of access control over large sections. You have come coming in, you have people walking across.

The next is high-speed rail. If Vande Bharat is designed for max speeds of 160 or 170 kmph, high-speed rail is 200 to 240 kmph. Our Ahmedabad-Mumbai bullet train is 320 to 330 kmph. Above that is the highly specialized Maglev, or the magnetic levitating trains of China, which move at 350 kmph. So you have layers of segmentation of technology relevant to customer needs and the state of the economy.

The problem with Vande Bharat is that it is using the existing tracks. So we have the same old problem: while Vande Bharat wants to increase its speed, it is trailing a freight train or the Tejas Mail or the Howrah-Krishnanagar-Lalghata passenger train. Their existing routes are crowded.

'Seven high-speed rail corridors of around 700 km each have the capacity to galvanize ₹20 lakh crore of investments and create a huge number of jobs India can ill-afford to turn away from.'

Whereas high-speed rail requires a different track altogether so you're not constrained. My biggest criticism is if you are deprecating high-speed rail for political reasons, to further extend the Vande Bharat network, it's a good idea, but it doesn't do away with the constraint of existing tracks. What will we achieve? We will just lose another decade.

Q: Okay, so what you need is a special effort with high-speed trains, which also fits this growing pattern of demand.

Correct. And therefore, you know, like in air travel, you have the Titan Scheme where many sectors are subsidized by the government, or you get a subsidy on fuel. So, you are trying to get air travel and connectivity to integrate India's society so that more Hawaii chapals can travel — a five star.

The railways are not catering only to the construction worker going back home. Obviously, it's important and we should strive to improve the quality of services we're giving them. But there are layers of customers. While we are serving one layer with traditional trains, there is the next layer, the Rajdhani, Shatabdi and Doonots. The third layer is Vande Bharat and at the apex is the high-speed rail. There are clearly defined customer segments. And the customer for high-speed rail is the one that you're losing the fastest. They're going by air, they're buying fancy cars, jetting along.

You see the number of people who go on driving holidays now. There are lovely cars and highways and comfortable Volvo inter-city buses. You don't have to be on the waiting list of the railways. You are losing your highest-paying customers. You can give better services and reduce the

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the 1000 crore subsidy you are giving which is actually benefitting your highest paying customers.

Q: The railways are crucial to the development needs of the country. But you need a more market-oriented railways.

Why did we set up NHAI (National Highways Authority of India)? After all, the Public Works Department (PWD) has existed for centuries. So, if you take that analogy, we needed a separate agency with separate public funding and PPP (public-private partnership) structuring to think about the design of roads, alignments and not leave it to the PWD at the Central or state level. We saw India become a success story in roads and highways.

I'm arguing that we already have a High-Speed Rail Corporation (HSRC) which is implementing the bullet train project. Expand that corporation slowly by giving them more high-speed rail corridors. If you expect the existing railway board to suddenly wake up and declare that they are going to do high-speed rail, it will never happen.

You have an opportunity here for institutional reform where all corridors are given to high-speed rail. And we are gradually able to reduce the dominance of the railway system by the traditionalist mindset of the railway board.

The railway board has a tremendous amount of work to do. Northeast connectivity, moving cargo and moving passengers. So, allow a new system with a new mindset to come up.

My next point is public finance. High-speed rail has tremendous spin-offs for the geographies it passes through. A study by the London School of Economics, the London Business School and Hamburg University has pointed out that cities, across countries, that have a station on the map of a high-speed rail link have a city GDP growth 2.7 percent higher than a city that does not.

We are also looking at urban dispersion. Everybody can't live in Delhi and Mumbai, but now people can live in Surat, Bardo, Navsari, from 12 intermediate stations you can reach Mumbai and Ahmedabad in a jiffy.

The Centre is funding the entire Bullet Train Project. But for the Metro Rail projects, the Central government funds 50 percent, and the state the remaining 50 percent. For high-speed rail why does only the Centre have to fund it? Mumbai have a system whereby rich cities, like Pune, Mumbai and Indore, with large cash reserves from their efficiencies and the state government must come forward and contribute for a particular segment of high-speed rail. It should not be only a Central subsidy.

Q: The elephant in the room is the slow and haphazard process of urbanization. Much of what you're saying actually hinges on a national urbanization effort.

I don't see it as having reached the collective

consciousness of our policymakers: the linkages of high-speed rail to economic growth to urban dispersion away from the big metros to increasing livelihoods. All these things are really one part. You can't just look at high-speed rail only by seeing a train or speed. It's not that. It's a transformation of society.

I'm slightly worried that the totality of the economic benefit, the national benefit and societal transformation, urbanization, all these pieces are not being easily grasped by public policy mandarins. Why isn't NITI Aayog publishing paper after paper saying let's do that? Why isn't the Prime Minister's Economic Advisory Council saying it should be the next big idea?

Q: If you were to set up three corridors, which cities would you connect?

First, since Ahmedabad and Mumbai are already to be connected by bullet train, it's only logical to extend it to Delhi. It's the highest economic corridor in the country. So, my first corridor is Delhi-Rewari-Jaipur-Ajmer-Jodhpur-Ahmedabad-Mumbai, of which Ahmedabad-Mumbai is already connected.

'I am arguing that we expand the corporation for the bullet train by giving them more high-speed rail corridors.'

Corridor number two: Chennai to Mumbai. It goes through a very high economic zone — Tirupati-Bangalore-Tumkur-Satara-Pune-Navi Mumbai with a spur to Goa.

Third corridor: Delhi to Amritsar — Delhi-Sangrur-Panipat-Karnal-Ambala-Chandigarh — Ludhiana-Jalandhar-Amritsar. Fourth corridor: Delhi to Kolkata — Delhi-Agra-Lucknow-Varanasi-Patna-Kolkata.

These are my four prioritized corridors. We have reexamined all of them in depth. The economics completely stands behind suggesting these four out of the seven or 10 that have been popularly talked about in railway establishments. We should get on with it.

Q: For a lot of people, actually, train travel is preferable to air travel. Air travel has become quite clumsy. Nowadays you end up spending a whole day getting to some city. What is the time you would be saving on a high-speed train?

Earlier, I told, there were eight direct flights from Delhi to Jaipur. Today there are only two. Apparently, there are no passengers opting to fly to Jaipur from Delhi. They are either driving

down, or taking the Shatabdi/Vande Bharat or the Volvo coaches. That answers your question because the distance is 200 kilometres from Delhi to Jaipur.

So the answer is, wherever there is a difference of up to around 400 kilometres you will probably see traffic shifting to high-speed rail. These would be corridors like Mumbai-Pune, Bangalore-Chennai, Delhi-Jaipur. Station development is important. You've got to make entry-exit from stations easier, and give people a sense of being in an airport, or at least in a mall. Our station development in the metros is disastrous, but that needs improving.

Q: High-speed rail requires a humongous amount of money altogether, especially to do it fast. What would we do here?

You know, money actually is not the problem. The Mumbai-Ahmedabad bullet train corridor costs roughly ₹250 crore per kilometre. Whereas the Metro rail today costs ₹500 crore per kilometre, but the Metro is able to tap up funding. Nobody has said that they don't have financial closure. And that is only a city-level development.

The funding today is for long gestation infrastructure projects. The world of finance has matured. NHAI has shown us this. Not only have they raised funds, they have been monetizing with INFRA (Infrastructure Investment Trusts) and others and rolling the money back. India has created a developmental financial institution called NABARD (National Bank for Financing Infrastructure and Development). We have pension funds, insurance companies. We hardly see them for infrastructure development. And this is nation building.

Q: What about land acquisition? Is this also going to hamper plans for high-speed rail?

It only hampers projects if you have a massive political opponent in a particular state. The land for the bullet train in Gujarat was acquired without any trouble. It was the opposition in Maharashtra that stalled it in that state. Today, the only reason land acquisition is a problem is when you have very strident, top-level political opposition.

One of the biggest expressways is the Mumbai-Bombay corridor. Has anybody talked about a problem in land acquisition? In UP all expressways have been built by the Tost Adityan government. Has anybody said anything about land acquisition? There is the new, larger airport, the New Mumbai airport. The Tata semiconductor factory in Dholera. At prices being offered today, which are four times the market value, a lot of people in agriculture are only too happy to get the land to come other use because it's a subsistence economy. Believe me, land acquisition is not a problem. It has been made into a problem for reasons of politics.

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Supreme Court on road safety

The Supreme Court's directives in the S. Rajaseekaran case mark a vital step towards efficient transport governance that prioritises safety, accountability, and sustainability on India's roads. The bench, comprising Justice J.B. Pardiwala and Justice K.V. Viswanathan, has ordered the establishment of a single, empowered national agency to oversee road safety initiatives across the country.

The development directly addresses the persistent issue of fragmented responsibilities and overlapping mandates among multiple ministries.

The proposed agency will monitor road design, vehicle safety standards, data collection, and post-crash emergency care, amid various critical areas by bringing all stakeholders (both directly and indirectly responsible) under one umbrella. This would ensure road safety management through an integrated, accountable framework.

The petition, filed in 2012 by Dr S. Rajaseekaran, an orthopaedic surgeon, had drawn attention to the alarming scale of fatalities caused by road accidents. The apex court had also recognised road safety as a matter of public health and governance in one of the previous hearings of the case. Over 1.8 lakh people lost their lives in 2024 alone, according to the Union Minister of Road Transport Nitin Gadkari. The Court also directed the NHAI and state road-owning agencies to conduct footpath audits in the 50 cities having millions plus population.

Beyond immediate implications, the judgment also signals a broader shift in governance. It goes from dispersed control to unified oversight and from policy discussion to time-bound implementation.

The Infravision Foundation has done seminal work in this area with IIT Delhi on Safe Highways in India: Challenges and Solutions and sees this judgment as a strong reaffirmation of the principles it advocates. It underlines the need for integrated, empowered authorities that enhance financial and operational efficiency and deliver safer mobility systems.

QUIZ: Test Your Infra Power

1. Which businessperson highlighted Bangalore's poor roads and garbage problems recently?
2. Which state in India shares 726 kilometres of border with Nepal?
3. Which is the only city in India with a water metro?
4. Which city metro will add 19 km to it by next year?
5. Which US based company is planning to establish nine gateway earth stations across the country?



1. Biocon Chairperson Kiran Mazumdar Shaw
2. Bihar
3. Kochi
4. Kolkata
5. Elon Musk's Starlink, SpaceX's satellite internet division.



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