Center for Strategic and International Studies (CSIS)

"India on the Move: Infrastructure for the 21st Century"

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KARL INDERFURTH: Ladies and gentlemen, if you could all take your seats. We have a few seats left around the table. These are not reserved. So please fill in the table, and continue getting your coffee and your refreshments.

And good morning. I am Karl Inderfurth, and I'm the chairholder of the Wadhwani Chair in U.S.-India Policy Studies here at CSIS. And I'm very pleased to welcome all of you to the second of our series on the emerging Indian economy. Our first lecture in this series was on the subject of India's energy options with Vikram Mehta. Now we turn to another subject of vital importance to India, namely its infrastructure needs for the 21st century. And I was looking at the list of those of you who are attending, and clearly there is great interest in this subject. And we're delighted to see that.

I'd like to thank – to begin – the GE Foundation for its generous support for this lecture series. As I said, this is our second. We intend to have three additional lectures on India's emerging economy, including one in New Delhi.

Now, it is also my pleasure this morning to welcome our guest speaker to CSIS, Dr. Rajiv Lall, who is the managing director and CEO of the Infrastructure Development Finance Company in India. Thank you, Dr. Lall, so much for coming to speak to us on this subject.

The – I'll say more about Dr. Lall in just a moment. But let me very quickly try to, as they say, frame our topic and discussion with a few scene-setting remarks. I'm going to paraphrase somebody that I don't normally paraphrase and that's Donald Rumsfeld. You'll remember Donald Rumsfeld. I'll paraphrase him by saying that we have four known knowns about India's infrastructure:

First, we all know that India's poor infrastructure has been identified as one of the major constraints on its economic growth. All sectors need attention – aviation, highways, railways, ports, irrigation, telecom, power – you name it. All of these need attention.

Second, we also know that the Indian government is well aware of this. Hence, Prime Minister Manmohan Singh's announcement last year that India plans to invest $1 trillion in infrastructure over the next five years, half of it coming from the private sector. Now, that is double the investment of $500 billion allocated in the last 11th year five-year plan – or 11th five-year plan.

Third, we know that none of this is going to be easy. Recently, The Economist had an article on infrastructure in India and entitled it simply, "Infrastruggles." (Chuckles.) I'm going to let Dr. Lall fill in some of the blanks on what those infrastructures – "infrastruggles" will be.

And fourth, we know that the United States is very interested in getting involved in the task of building up India's infrastructure. As I said earlier, we can look at the list of those attending this event today, and we can see that interest. I should also mention that I recently ran across a report by PricewaterhouseCoopers entitled, "Infrastructure in India: A vast land of construction opportunity" – almost limitless, some have also said. So suffice it to say that with that U.S. interest, it's not surprising that the first overseas trade mission that John Bryson will undertake in March, as commerce secretary, is to India, to focus on what U.S. companies and businesses can do to be a part of India's massive and vital infrastructure undertaking.

Now, with those four known knowns framing our discussion, let me say a few words about our speaker, Rajiv Lall. I think I've already mentioned that his full bio is available outside. He is – his position as managing director and CEO of IDFC – he began this in 2005. He took this position in 2005. He has had over two decades of experience with global investment banks, multilateral agencies and academia. A major focus of his has been emerging markets, especially India and China. I should mention, by the way, that I hope and trust that someone here, during our Q&A which will follow his remarks, will perhaps raise the question of comparing and contrasting these two countries, India and China, in their respective quest for 21st century infrastructure – always an interesting topic.

Now, Dr. Lall also chairs the Infrastructure Council of CII, the Confederation of Indian Industry, which I should add is a valued friend of CSIS and a co-sponsor of this morning's event. Now, time does not permit listing all of Dr. Lall's positions and accomplishments. Suffice it to say that he's also been president of the Bombay Chamber of Commerce. He's also been India's representative to the G-20 work group on infrastructure. He has his B.A. from Oxford. He has his Ph.D. from Columbia. Again, his bio is outside.

But given that brief encapsulation of his experience and background, I think that you can all now fully appreciate why we sought out and why we greatly appreciate Dr. Lall's appearance here at CSIS this morning. So without further ado, may I ask Rajiv Lall to come to the podium? You don't have far to come. And we look forward to hearing his remarks on India's infrastructure for the 21st century. And then we will have – we'll go interactive after that and have a good question and answer period, which will take us to 10:30.

So, Dr. Lall?

RAJIV LALL: Thank you. (Applause.)

All right. Ambassador Inderfurth, thank you so much for that generous introduction. It's really a pleasure for me to be here with you today on a subject that has for better or for worse consumed most of my energies for the last seven or eight years.

In fact, I returned to India after several years overseas in 2005 to take up this job. And somewhat as a – I guess it was an unknown unknown at the time, I – when I installed myself in my office, I put a picture of myself bungee jumping on the wall. And the reason I did that was I – it felt like – that's how it felt like joining IDFC. (Chuckles.) And I can tell you that the experience hasn't disappointed.

So it's been absolutely thrilling, actually, to be part of this wonderful rollercoaster ride, I suppose is the best way to describe it, along the infrastructure journey on India. Like most things in India, the story is quite colorful. And so I would like to, in my remarks, place it in a little bit of context and then deal with what we have achieved, of what we haven't achieved, what remains to be done, and some thoughts about how I think or do not think we will be able to attain those goals.

So first a couple of words about context. You know, people don't fully realize it, but what India's been trying to do in the infrastructure space is a direct consequence of – and a follow on to the reform process that was unleashed in 1991. And the basic premise of the reform process was, you know, we wanted to take away the so-called constraints of the so-called License Raj and enable, encourage, unleash the potential of the fabled entrepreneurial energy that resides in India. And in many respects, across different sectors of the economy that is what has happened.

Infrastructure is no exception. The political speak for enabling private sector participation in infrastructure is that, well, you know, this is a wonderfully dynamic thing and we really must have the private sector deliver these services. But the reality is that like many other parts of the world, the government doesn't have the resources to invest in the sector. So if you – if you trace back, it's quite interesting. After the fiscal consolidation of the 1990s that followed the reform program or that accompanied the reform program, we also saw an escalation in coalition politics.

And the economic or financial consequences of that – of that evolution has been that progressively it's become much harder for the government of India to allocate any substantive or really any portion of its expenditures towards capital spending. And it's a – it's a declining line, which sort of turns around only in 2002, that the pressures of populist politics have made the composition – have deteriorated over time the composition of government expenditures and that really means that government has had to rely very much on the private sector.

Starting about 2002, 2003 government do make an effort to turn that trend around, even in government expenditure. But 2003 is the nadir, if you like, of – over a 30, 35 year period of spending in infrastructure, loosely defined as a share of GDP. And you know, whereas in the years of the Indira Gandhi government and so on, a lot – a lot was being spent on rural infrastructure development and giving free power to farmers, et cetera, et cetera. That was the genesis of the sort of – the Green Revolution in the 1970s and '80s. It was only in 2003 that government expenditure on infrastructure started to increase. So – but between the 1980s and 2003, we came to about 3 percent of GDP equivalent of spending on infrastructure.

The last decade has seen an extraordinary turnaround, right? And over this decade, we have seen that spending on infrastructure, as a share of GDP, almost triple from 3 percent of GDP equivalent. We are now at about 8 percent of GDP equivalent. But what is even more remarkable is that whereas in 2003 very little of that spending was on account of privately developed infrastructure, in 2008 of roughly a third – a quarter to a third of that 8 percent of GDP equivalent was on account of private infrastructure. So we are now doing, you know, 3 percent of GDP equivalent. So we are talking about 60 (billion dollars), $70 billion a year in private infrastructure. And when I say private infrastructure, I mean infrastructure where the equity risk is, in some measure, being taken by a private provider. So that's how quickly things have changed around.

Second comment I wanted to leave you with about the context is that the scale therefore, in relative terms, of private participation is unprecedented in historical terms. And in – and this is in sectors that are delivering services that are quasi-public goods. So whether it's electricity, whether it's water, whether it's (road ?) transportation – telecoms is a question mark, but – you know, whether it's a public good or not. But you know, there is – there is an element of essential service that is being provided to the general consuming public. That's what this sector is.

Third comment is that private parties are being called upon to deliver these public services in a political context that is extraordinarily demanding. So whereas, you know, in 19th century U.S. you might be delivering – you know, private parties might be delivering infrastructure services, the expectations of the consuming public were very different. We didn't even have universal suffrage then. In the 21st century, not only do we have universal suffrage, right, the expectations of the electorate are much higher than at any time before. So now electricity is no longer, you know, is now considered almost a right. It's a right to electricity. I can't – I mean, education suffers because I don't have electricity in my home – a perfectly legitimate point. Water is certainly a right. All these services are now – telecom services – I mean, it's borderline – the right to communication, access to communication, the right to transportation. So the sense of entitlement from the electorate is much, much higher.

Now you juxtapose all of this together, right. And I'll make the fourth point. The fourth point about the context is that, you know, as a – yes, we have reasonably strong institutions, but again it's no secret that administrative capacity of government have been weakening over time – are not as efficient as they used to be. So you have a weak state apparatus – a weakening state apparatus whose dysfunction, if I might use the term, has been exacerbated because of the nature of our coalition politics, right.

So now you juxtapose all these four different aspects of the context – hugely increased, unprecedented participation of the private sector in the delivery of services that are regarded by a very active and politically conscious electorate as entitlements with a weak state, right. This is a cocktail for an interesting rollercoaster ride. I mean, the juxtaposition of public interest and public good with – or the intersection of that with private parties seeking to maximize profit. Indeed, this is a well-known problem elsewhere in the world. It's challenging in most part of the world. But then you transpose that into the Indian context and you can understand the term "infrastruggles." It is a – it is a very, very difficult and challenging environment in which we are trying to deliver these services. So that's the – that's the broad context.

Now I want to, again, set the record straight and suggest to you how far we have come and what we have actually achieved in a short period of time, despite this enormous, overwhelming – I mean, it's not enormous, it's overwhelming complexity. All right? And then, I don't know how familiar you are with the facts, but quite apart from the 3 percent going to 8 percent, you know, the private participation going from zero to 30 percent, here are some – here are some numbers that will provide you some color.

You take port cargo-handling capacity, and you're talking about container-handling capacity in particular, which is the modernization of our port infrastructure. Over the last decade, capacity has tripled from 3 million TEU to 9 million. And the share of private participation has gone from under 25 percent, under a quarter of that, to close to – I think the latest number was 80 percent. That's right. Eighty percent of the current 9 million TEUs are delivered through privately managed ports, privately developed and privately managed ports.

Take power generation, which is the subject of one of the two Economist articles: We today have capacity that is a little over 200,000 megawatts. And we have added about 45 (thousand) to 50,000 megawatts just in the last five-year plan, five years – over the last five years. It's short of the plan estimates or targets, but this is the most capacity we've added in any five-year period since independence.

And what is more extraordinary is that of that, you know, 200,000-odd megawatts of capacity, roughly 30 percent today is actually – is in private hands – so again, privately developed, privately managed. There's another 20,000 megawatts of capacity that is going to be completed in the next fiscal year, that is under construction, and two-thirds of that is private. So by the end of the next fiscal year, we will have close to 220 or 230,000 megawatts in operation, of which a third, more than a third, will be in private hands.

The telecoms story, which has been the poster child of Indian infrastructure, is well known. But again, to refresh your memory, just over the last decade we have gone from under 20 million subscribers to close to 950 million subscribers. Two-thirds of these subscribers are urban; one-third is rural. Urban penetration is 160 percent now. Rural penetration is close to 40 percent. The cost of telecom service delivery has come down from 15 rupees a minute to under two cents – I mean 70 paise a minute, which is 1.5 U.S. cents a minute.

That's the scale and speed with which this bit of infrastructure has been built. Roads, I can go on. I mean, but you get the point. Roads, we have done about 13,000 kilometers. I mean, our previous minister used to boast that he'd be up to 20 kilometers a day of new roads being bid out for private participation. Well, we're now up to 15 kilometers a day, so you know, over 13,000 kilometers of road have been bid out for private participation.

It's the largest PPP program currently in operation anywhere in the world. I mean, it's just – the numbers are quite mindboggling because of the private participation. In absolute terms the numbers, compared to China, are nothing. Right, so I'm not even going to go there. But in terms of the private – (chuckles) – participation and the scale of private participation, and in the Indian context, these numbers are absolutely humungous.

Now, what does all this, all of this tell us? What are the good things it tells us? What have we achieved? Well, I've noted down four.

The first is that it reaffirms and revalidates that the execution capacity and risk-taking capacity of our entrepreneurs is indeed phenomenal. I mean, in the Q&A I can share with you anecdotes of the circumstances under which people have put money down – and this is serious money, now – in building infrastructure, and the challenges they have in trying to put this together.

And it is absolutely extraordinary, the quality – and not just the speed, but the quality of the stuff that has been built, whether it's new roads, whether it is power plants, whether it's ports. You should see some of the private ports on the west coast of India – absolutely first-rate. And the efficiency per – however you want to measure it; that may be per gantry crane or whatever – is as high as Singapore. So, execution capacity, risk-taking ability of our entrepreneurs.

Second, it does demonstrate – I mean, as I said, we are doing $70-odd billion a year in private projects – almost all of this is domestically funded. So it demonstrates that our financial system, notwithstanding its limitations and frailties, et cetera, et cetera, has had the depth and the breadth, so far, to accommodate this huge expansion.

Now, it's a different matter whether we can continue going at this pace, but so far we've been able to swallow this – with some digestion issues, but we'll come back to that – (laughter) – we'll come back to that later. But we have swallowed it. So the python has swallowed the pig. The pig is now in there somewhere, in the belly.

The third thing it shows – and this is, again, not often talked about – is the depth and breadth of the supporting ecosystem to make all of this happen. So you know, you need – you need accountants, you need lawyers, you need regulators. You need a whole bunch of professionals that are able to write the contracts, enforce the contracts, to make these things, because these are complex commercial arrangements.

So that ecosystem does exist in India, and so, you know, especially when I talk internationally people say, well, why can't we do this in other countries? It's not so simple, you know. You have to have this entire supporting infrastructure to make this feasible. And India has that and we have delivered on it.

And the final thing it does demonstrate – and this is much under debate, and rightly so, today – is that it does show that there must have been some government policy breakthroughs to enable all of this. Right, so it's not as if government policy is completely dysfunctional. Without some initial breakthroughs, we wouldn't have had the pace of development that we have had. OK, so that's the – that's the glass half-full, all right?

Now let me turn to the glass half-empty, which is the downside of the roller coaster. And I've already alluded to that. So again, let me try and paint a picture for you – I think, I mean, visual representation is always helpful for me in understanding things. So imagine a car that has, that must have four wheels. One wheel is government. The second wheel is the private sector. The third wheel is civil society, and the fourth wheel is regulators and judiciary – some kind of body to intermediate, if you like.

So these are the four wheels of the car. For this whole system to keep working, for this car to keep rolling, all wheels must be riding or turning at the same speed. Now, what has happened in the last decade is that the private sector wheel of this car has gotten ahead of itself. So you know, we had a little bit of – we had a government breakthrough, you know.

After years of repression, years of suppression of this huge entrepreneurial energy, finally in the 1990s, you know, the bottle is uncorked. The genie comes out of it. And you have this hugely muscular, enthusiastic private sector that is driven by profit and, you know, they want to make their billions and millions and gazillions. And they invest left, right, and center and they've created this huge stock of investment.

But the wheel that is government is not turning quite as fast. You have, as I said, weak administrative capability. And what that means in this context is that there is room for gaming that occurs now, because you have a very smart private sector. I mean, this is known – this is, you know, financial services 101 in this country, similar kinds of things. Elsewhere, I mean, this is the whole story of how you have a very sophisticated private sector that navigates past all kinds of constraints that the government is trying to impose on it, but the government doesn't know how to deal with it anymore.

You know, it's beyond their own sophistication, almost. So this is what happens in big procedures gone wrong – you know, people bid aggressively and then, once they are declared the winner, they manipulate the system to their advantage. And there are all kinds of variants on this, but that's something that begins to happen. In short, you've had a huge resurgence of crony capitalism, mark two, in the Indian context, right?

Now there is the civil society wheel that has been dormant for some time, and they're saying, my god, these two guys are not really in sync and we can't tolerate this anymore. So you now have systematic protest. OK, we can't tolerate this level of corruption; this has become just too much. And you have civil society movements that are becoming more and more articulate and vociferous and influential, aided, by the way, with a very effective media.

And this is, again, the complicity, if you like, between the middle classes and media. You know, media in our country is privately owned. And the commercial interests of media lie with the middle classes because that's where the advertising dollars are generated. So anything of concern to the middle classes gets amplified in the media, especially the electronic media. And corruption has become a big issue for the middle classes in India. That's been picked up – has been picked up by the media and amplified.

So when all this is happening, then the regulators, the judiciary, are compelled to react. And so they have to step in. But it's a blunt instrument, let's face it. So I'm now referring pointedly to the supreme court decision on revoking the 122 telecom licenses. You know, when you think about it, morally and ethically it was the right thing to do. It's a correct judgment. But it has consequences for business.

There are some people who have entered into contracts on the presumption that it's a valid contract. Now those contracts have been declared invalid. What does it do to the billions of dollars the Norwegians invested in Indian telecom? You know, but from a moral and ethical point of view – you look at it from the point of view of a voter in India – it doesn't matter. This is the – this is the good fight. We have to fight it. This is what democracies do.

So you have a breakthrough. You have a period of enthusiasm. You get a disconnect, then you get a reaction. And this is where we are. This is, again, a sort of – I've taken some liberties in describing the glass half-full. But let me become a little more pointed in five areas where there is a lot of work that remains to be done – especially, now, I'm focusing more on infrastructure in particular.

The first is what do we do about land and the acquisition of land when it comes to developing infrastructure, right? Land is a hugely emotive issue in our country. It's very scarce. And it is at the heart of distributive justice. So when fat cats come acquire land, using the state as a shield, supposedly acquiring land for the public purpose, and the public sees that this land is being used for generating profits, it causes some reaction, rightly or wrongly.

Now, you can debate whether it is a public purpose or not, and this is a grey area. This is a grey area. If I'm acquiring land for a power project which is to generate electricity for the public, I can argue quite legitimately it's for the public purpose. But if I have a captive mine associated with that, a captive coal mine, which gives me extraordinary profits from it, then, you know, the debate could swing the other way.

So how we distribute land and what is fair is one set of issues. But what is efficacious is quite another set of issues. So now the political system is such that we are focused on fairness now, and efficiency is being relegated to a second-order debate. So in the world of political rhetoric, efficiency of decision-making doesn't figure. We'll sort that out later.

So whatever legislation is being proposed today is potentially disastrous from the point of view of business, but it has the perception of being fair. Now, how do you find that balance between what is fair and what can be made to work in this politically charged environment? That's a huge challenge that we have that we need to address, and land is at the heart of it.

A similar kind of issue is with the environment, right? And environment – mostly it has to do with deforestation and water, but mostly deforestation. It just so happens that most of our coal lies in heavily forested areas of the country, where most of our tribal communities also live. So now when you open up access to mining companies to go mine, trees are cut down, people are displaced.

Now, how do you find the balance between the rights of those individuals and the obvious need for coal? We have 500 billion tons of coal – no, sorry, whatever – 280 billion tons of coal reserves. We have the fifth-largest coal reserves anywhere in the world, right, but we can't dig it out of the ground to feed our power plants. And the environment is at the center of that big fight.

The third is financing. Financing for public infrastructure is very easy; it's just budgetary financing. Nothing you need to do – you just need to issue government paper, and as long as you can manage your overall debt it's OK. But private financing for private projects is much more complex. It requires layering of differing kinds of securities, et cetera, et cetera.

There's a mismatch between the savings that we have, where they lie, right, and the needs of the infrastructure sector. It's not as if we don't have, you know, significant savings. We save 35-odd percent of GDP. But the bulk of those savings lie in banks or are not even properly intermediated through the formal financial system. And so they're not available with a long enough term that can be delivered to infrastructure, because you need long terms to match the long term of the assets.

There's a mismatch which requires institutional evolution. We need to develop our own pension and insurance industry, which is happening, but will take time. Today we have a disconnect, so we have to rely, as a bridging mechanism at least, for long-term savings from overseas. And we have to find creative solutions, and this is where connectivity with the U.S. capital markets in particular is very, very important to us.

Fourth issue that we need to resolve is administrative capacity. And I've talked about – this is a euphemism for governance – but you know, I'll give you Coal India as an example. You know, we are importing 50 million tons of coal a year today, at a cost of $5 billion a year, whereas we have all the coal in the world. And we are not able to do it because Coal India – and they'll deny this – have been just singularly unprepared for the pace at which generating plants have come on-stream. They've never seen this in 50 years.

So you know, when you have 30 (thousand), 40,000 megawatts of new capacity suddenly coming up, although they have promised these people that they will provide coal, they just don't have the ability to provide the coal. So we are ending up in a completely suboptimal situation because we don't have the administrative act together to bring the coal out of the ground in time, right? We're going to have to rely on imported coal at triple the price, the cost of which will have to be borne eventually by the taxpayer, one way or another.

And finally, we need to vastly improve our regulatory capability, because regulation – you know, in this intersection between private and public, which is so intense in our country, regulation has to be absolutely first-rate – because they have to adjudicate between the interests of the risk-taking private provider of the service and the general public good. And so far the regulatory community has been politically influenced and borderline, that you wouldn't – just don't have the capacity and the sophistication to stand up independently from government and make those regulatory decisions. So this is the work that remains to be done.

Finally, let me turn to the way forward. So this is – this is where we are. So we have this mess in telecoms; we have this mess in the power sector; roads are still doing reasonably well; airports have done well. But the two big sectors, telecoms and power, are reeling from, you know, this – the wheels of this car are going in different directions. So my best assessment for the way forward, that it'll be what you could characterize as the "great muddle through" – bit like the, you know, European sort of situation. (Scattered laughter.) We will – we will muddle through. (Chuckles.)

And we have to live with third- or fourth-best policy choices, right. You know, there is – can be no accommodation for corruption. But let me just describe to you the real-life dilemma of a sincere public official being called upon to make critical decisions. The choice for a number of public officials is either to have no infrastructure, candidly admitting to the lack of administrative capacity within government to deliver it – or tolerate some untidiness in the system and have infrastructure built.

So I'll give you – I'll give you an example. Let's go back to the telecom situation. The controller and auditor general, who has acted as a very strong voice of our conscience on these issues – on the telecom issue – estimated the loss from the manner in which the licenses were given out – the last set of licenses, telecom licenses, were given out – at close to $35 billion, right. And he will never admit to it, but he's trying to make a rhetorical point. He's trying to bring this issue to the – to the center of public debate. So he has, you know, used every trick in the book to elevate the cost, right.

So depending upon how you discover the price of spectrum, et cetera, et cetera, my guesstimate would be – this is not scientific, but the cost – the real cost lost to the exchequer might be closer to 10 (billion dollars), 15 billion (dollars), not 35 billion (dollars). But let's take 10 (billion dollars), 15 billion (dollars). Ten (billion dollars), 15 billion (dollars) is less than what we spend on our food subsidies, I think. And of those food subsidies it's well-known – it's been empirically recorded now – two-thirds to three-quarters are wasted. They don't even get to the intended recipient, right.

Now for this $15 billion loss to the exchequer, if we are building the next generation of telecom infrastructure – and I've told you, I've shared with you our history in telecoms. It's not as if our telecom companies that got licenses even in 2001 have made super-normal profits – only $2 – (inaudible) – a month and costs that are down to 1.4 cents a minute is really not making profits. It's hypercompetitive, right. What are we talking about? Why are we debating this issue to the extent that we are? I'm not saying that we mustn't go after corruption. Of course we must. But we have to keep the thing in perspective, right. This debate has gotten out of hand, and we're losing sight of the more important things that we have to achieve.

So in the "muddle through," I suspect what'll happen is that it – there will be – there will be an accommodation whereby deals will be cut and – on – in the power sector, for example, power purchase agreements that were supposed to be binding for 25 years will have to be reviewed, and will be allowed to pass through the higher cost of imported coal – which means that lenders will be protected. The asset will be built. The equity returns for the developer will, however, come down. But the cost to the consumer will go up.

So the pain will be distributed somewhat widely, and you can – there'll always be debate about how fair that distribution of the pain has been. But it'll be a "muddle through." It'll be a "muddle through" because the ideal situation would be that we get our act together in Coal India and mine the coal that we're sitting on at a third of the cost, and use that to fire our power plants rather than relying on imported coal from Australia at three times the price. So that's the "muddle through" in power.

Similar story will unfold in telecoms, where the aggrieved parties will come back to the table, will probably bid again. They will have to absorb some higher cost, but they will be allowed to operate. There will be some consolidation in the industry, and then life will – life will go on. And I can go on from sector to sector, but that is the nature of the "muddle through" that is likely to manifest itself.

Now you can ask the question, is that good enough? Is that good enough? Is the best we can do, in the complex country that we are, "muddle through" in the delivery of – in the construction of such an important sector in our country? And the answer is surely no, right. "Muddle through" cannot be good enough. And again, this is – to leave you with some thoughts about the future, what are the challenges for the next 10 years? And we were barely addressing the challenges of energy and transportation. And I haven't even gotten into what we are not doing in railways, OK.

For the next 10 years, we have to deal with the challenges of urbanization. For infrastructure, that's going to be the next big wave. We expect, over the next 20 years, our urban population to grow by 250 (million) to 300 million people. That'll be about 600 (million) to 650 million people living in cities by 2030. The quality of our cities is deteriorating by the day. The administrative capacity to plan urban infrastructure does not exist. The fiscal base for our towns is nonexistent, right. How is this infrastructure going to be built?

Water is only now beginning to appear on the edges of the debate – public debate. We are depleting our water table at an astonishing rate. And I will – I will conclude really by leaving you with one factoid about water, and what causes – you know, it's the – it's the result of – it's the unintended consequences of good intentions, you know. We have been subsidizing the use of electricity for irrigation pumps for the longest time. And government after government makes the supply of electricity to farmers free. So pump irrigation, the water is free of cost. That is what is causing our water tables to deplete at an astonishingly fast rate.

So what was intended to help agriculture production is now causing a huge problem in terms of availability of water resources. And the politics of it is such – and this is the fundamental issue with democracies – that we are unable to think about the long term. So how do we start focusing on the long term to translate that into political decisions today, I think is the challenge that we are facing in all capitalist democracies. And we are no different, except that we are a different stage of our evolution.

I am hopeful, however. And the reason I am hopeful is that I think that – this is why the next decade is hugely important for us. I think that we are on the cusp – I would like to believe – and this is a completely unknown unknown, so I am – I'm just venting my hope, actually – (chuckles) – more than anything else – is that we on the cusp of a radical change in the nature of our politics in our country. And it's the youth of our demographic, urbanization, the growth of the middle class and media that are conspiring to bring about that change.

So the young demographic and urbanization, combined with electoral reform that has seen the redrawing of our electoral constituencies based on censuses – on census, means that the concerns that are being expressed through the electorate will become more issue-based rather than identity-based. So it's a transition from identity-based politics to performance-based politics that I hope we will see in the next decade through the electorate.

And then outside the electorate, it's this whole dynamic of the middle class and media that will begin to exert huge pressure and influence that will change policies. And hopefully a combination of those two forces is what'll help us navigate the challenges that lie ahead. Thank you. (Applause.)

(Audio break.)

MR. INDERFURTH: Great presentation, Dr. Lall. Thank you very much. Very clear, very comprehensive, and something that I think that we all in this room can relate to, when you talked about the "great muddle through." I think that that is another commonality with the United States. With our various policies that we're addressing, we are also involved in the "great muddle through." But hopefully with India you'll be able to go from "infrastruggles" to "infrasolutions" in the – in these years ahead.

I'm going to forego asking questions. I want to go – we've got 30 minutes, and we've got a lot of people here that have a lot to contribute to this discussion. So we – let's just go to questions. I'm going to ask you to identify yourself and your affiliation if you would like. Please keep it to one question, as opposed to multiple parts. If you want to make a brief comment to begin, please do. Make it brief, because that will add to our discussion here. And let's begin with those comments. Please.

Q: Thank you. I'm – have to leave soon, so I just wanted to get my question in. On –

MR. : (Inaudible.)

Q: Oh, sorry. (Inaudible) – chief economist South Asia at the World Bank. The question is – you know, muddling through – we do have in India an example of a state that has actually cracked some of these problems. So – and maybe Rajiv can say a little bit about that, because it's not impossible, in this – in this – in this difficult country that we – that we're dealing with, to do it. It's just – it takes – and it can be done; there are examples. And they're working successfully. So why don't – you know, maybe we should – we should mention those and use them as examples for the rest of the country.

MR. LALL: So I – you are presumably referring to the state of Gujarat, which by all measures – economic measures has had a – has had an absolutely extraordinary decade. So yes, it can be done. But let's – it's useful to put it in its political context. Gujarat is, I often say, the closest we have in our country to China, both economically and politically. (Laughter.) And so I don't want to suggest that that is why Gujarat works and that we need China-like politics to make India work. But it just means – it does mean that it requires nothing more complex than strong leadership and administration.

But – so the solution is, you know, abundantly clear. The examples are there. But it's the will: Do we have the will? This is the whole thing about short term versus long term. And my hope is – so that – so let me be more positive about it. My hope is that the next elections will show us that Mr. Narendra Modi does not have to use the kind of tactics he has used in the past to get himself re-elected; that the next time, if he does win the election, it'll be on the strength of his development record, so he himself will have gone through that transition – the politics of identity and religion to the politics of performance; and that other states will learn from that.

And there are examples of that happening, Bihar being a case in point. Bihar is one of the least developed states in the country. They've had a relatively clean, effective administration for the last four, five years. Chances are that this administration will be voted back into power in the next state elections. And it will be because of the performance record. So there is, therefore, hope that performance will speak for itself in the form of political success. And that is what is going to trigger a wider change.

Q: Thank you. I am Genie Nguyen with Voice of Vietnamese Americans. Would you explain to us your plan for the next 10 years regarding building up infrastructures, and especially in the case of waters – how to bring waters throughout the country? Thank you.

MR. LALL: OK. And that's a – I'll be – I'll just give you some highlights, and I'll give you the official version, I suppose. The official ambition is to – as Ambassador Inderfurth said in his opening comments, to invest a trillion dollars over the next five years, of which a very substantial chunk is expected to come from infrastructure – from the private sector.

Forty percent of this trillion dollars, roughly, will be allocated to – towards energy security. Another 20 (percent), 30 percent of that will – 20-odd percent is allocated for transportation infrastructure. And the rest of it is supposed to help social infrastructure – so a very heavy, escalated investment in public health and in public education. That has already begun to happen in a meaningful way. I don't think that we have yet allocated enough resources for the development of urban infrastructure. And that's going to be – you know, with all the other competing priorities, I suspect that that is one sector that's going to be left behind.

On water in particular, I think that – my own view is that very little is done – is being done to focus on economizing on water usage, or changing – inducing behavioral change. That could go a very long way towards attenuating our problems. And too much attention is being focused on whatever dollars needed to build new infrastructure. So that change in the debate still needs to happen. It'll happen when people realize we just don't have the money. So we'll have to think of other ways of at least postponing our problems. And that'll have to be by inducing change in behavior.

Q: Thank you for your remarks; very interesting. Jennifer Layke, Johnson Controls. I wanted to follow up on that, because I – we work on energy efficiency, water efficiency. We run energy performance contracting and those types of projects in India and elsewhere around the world. And one of the things that we've noticed is this – the build-out of urban infrastructure has very seldom focused on the performance of that infrastructure with regards to water or for energy. And I'm wondering about how you balance this focus on supply side with an equal focus on the demand side.

MR. LALL: I think the only way to get that done is to demonstrate success with some examples. And that's one of the great and encouraging features of what's happening in India, is that there's no one reality in India. Right, so there are multiple experiments happening in different parts of the country.

I think that there are – I mean, I can think of at least a dozen medium-sized to large-sized cities that are progressive, that are willing to experiment with these sorts of things and indeed have already been doing a lot of that. And there our focus and effort must be to engage with those cities and show what can be done, so that from that there is then a demonstration effect that can be rolled out more widely.

So just as an example, the success of the Delhi Metro has had a huge demonstration effect – not always of the right kind, right – but it has had a huge demonstration effect on many other cities in the country. And so that's been a very important step forward for the development of public transportation. Because otherwise we were just going roads, roads, roads, more cars, more cars – but the success of the Delhi Metro has, I think, begun to change people's thinking on that.

MR. INDERFURTH: May I take this opportunity to thank you for the Delhi airport, please? (Laughter.) I just wanted to figure out a way to get that into the discussion, because as a frequent traveler to India, that has made it so great. So I saw a question on this side. We're going to move over to this side.

Q: Thank you. Yes, thank you for an excellent presentation. My name is Jean Aden and I am, among other things, a consultant to the World Bank now. I wanted to ask, can you tell us something about the private sector firms that are involved in this expansion of infrastructure, especially their size and scale?

What proportion of them might be small or medium-size enterprises? What proportion are domestic enterprises that cover the entire country? What proportion have been international, and how do you see this evolving? Is there a desirable composition, in your view?

MR. LALL: Right. Well, I don't know if it's desirable or undesirable. I think it, in some sense, is inevitable. I can, to answer that question, maybe I'll put on my – (inaudible) – hat. So as a financier, you know, one of the conversations we always have with our rating agencies – our rating agencies are worried that we have too much concentration of risk, not just in specific sectors but in terms of the number of groups that we are actually dealing with.

So two-thirds of our balance sheet is – represents loans and investments with just 25 groups. Right, so that's very high – (inaudible). From our point of view, that's very effective risk mitigation – (chuckles) – but from the rating agency's point of view, they look at it as concentration of risk. The reality is that, the execution challenges being what they are, it requires a certain scale to be able to cope with the uncertainties that these people have to deal with.

So size is important. So – and what happens in our balance sheet also happens on the balance sheets of most of the Indian financial system. I would say that, you know, 50 (percent) to 60 percent of the billions or tens of billions of dollars that have been invested in infrastructure have been – have gone to maybe 30, 35 groups, industrial groups. These are – about a third or half of these are new generation. They are people who came, who grew up in the construction industry and then transformed themselves into infrastructure developers.

The remaining one-third is a whole – is what we call, in our own balance sheet, tier-two and tier-three clients. Tier-two clients are – do not have the strength or size of balance sheet yet, but over the last decade have developed a very predictable and high-quality track record of delivery. These are again – a lot of them, again, are construction companies, but some of them are engineering companies.

Some of them have been mining companies. So mining companies that were doing iron ore mining have now gotten into power generation, which is coal-fired, so there's a whole – you know, there's a whole bunch of evolution that is happening amongst the business communities. And then there's a third group of tier three who are really fragile and are living hand-to-mouth from project to project, and may not survive the trials and tribulations of the sector.

Q: Hi. My name is Sachen Goury (sp) and I'm a student of public policy at George Mason University. So my question was one of the things that you sort of didn't really talk about, railways.

MR. LALL: Yes.

Q: They are a big issue, primarily because they just don't have the money to expand. So what do you think should be done about that? And just as an add-on to it, I'd just like to point to some of the other infrastructure that has really not – (inaudible) – here is power transmission and oil pipelines. Are there – what is the mechanism to fund the future expansions in those areas?

MR. LALL: Well, oil pipelines and transmission lines are really not an issue. There's going to be massive privatization there of – private participation has already begun. There were some residual issues with respect to the regulatory regime applying to transmission networks. That has now been resolved. And so I expect to see a significant amount of interest from the private sector in transmission.

Actually, one thing I didn't answer is that given this whole context, there are very few foreign players. And the foreign players are usually just – so the foreign participants are equipment suppliers or now, increasingly, construction companies who have contracts, who work on contracts. But given the complexity and the particular advantage that information asymmetries deliver to developers, foreign participation is limited.

But we are seeing now, for the first time, some of the more risk-taking Asians stepping into the market. So we're seeing Malaysian companies, for example, getting into the road sector. And for the first time, this year I think we are looking at European companies coming into the road sector, coming into renewable energy. In telecoms, I don't know what happens after Telenor's situation, but I suspect – my bet would be Telenor will come back and will be allowed to operate.

Coming back to railways, railways is a very – I'm actually part of something called the railway modernization committee. It has been a very instructive experience for me. It's a very – it's a very – again, it's a very difficult problem. And the problem is that the political masters who oversee the railways do not want to tolerate any rise in tariffs to the consuming public, nor do they have the resources to allocate more from the budget to the railways. And they keep pointing the finger to the railways themselves and saying, look, you have to reform yourselves and create surpluses if you want to grow and invest in infrastructure – which is so unfair to the railways because they are trying to eke out every bit of sweat from this asset.

And they're working very hard under very, very difficult circumstances. And all that the public sees is the occasional railway accident, and nobody talks about the fact that parliament imposes – this year, last year, whatever it was – the last budget – the 128 new routes that the railways have to construct, only 10 of them are commercially viable.

Q: Hi, my name is Matt Shruhan. I'm with the U.S.-India Business Council. First of all, Dr. Lall, thank you very much for your very insightful remarks. One thing that struck me, you mentioned that India so far has been able to manage to finance most of its infrastructure development from sources within India.

But as it seeks to develop infrastructure and spend over a trillion dollars in the next five years, obviously large amounts of foreign capital will be necessary. India has started to develop an infrastructure fund to attract foreign capital. But in addition to developing a long-term insurance and pensions market within the country, what kinds of policies do you think need to be put in place to attract foreign investors? Thank you.

MR. LALL: Well, I think first of all we need to give a sense that our regulatory regime is stable. That's the, I think, the most important thing that we could do to attract overseas risk capital. But that's, you know, as I've described, that's a political process that'll take – it'll take time. And there will be pockets of success and there will be other pockets of failure. But what I can advise potential investors is that within this very difficult environment, there are opportunities to make very decent returns.

What is happening as we speak is that the first generation of infrastructure assets, that are now built, are now developing a post-construction cash flow history, right? And they will deliver very predictable and attractive yields. So I see a huge opportunity for yield-seeking fixed income investors to provide long-term debt financing in post-construction infrastructure in India. And that opportunity's only going to grow.

The most important thing that the government needs to do – has already started doing – is to open up access to foreign investors to the domestic rupee-denominated debt market. And one of the specific recommendations that we've been making to the government to increase liquidity and access to investors of this sort, is to allow infrastructure companies and SPVs to issue long-term rupee-denominated debt, but that is dollar-settled.

So it would be listed securities on some offshore exchange that allow investors to buy and sell the paper, taking the foreign exchange risk, but it gives them liquidity whenever they need it. And from the Indian perspective, it gives us long-term resources without burdening our assets with the foreign exchange risk.

MR. INDERFURTH: I saw a question back here. This gentleman?

Q: So given the –

MR. INDERFURTH: Arnaud, I'm sorry, do you want to introduce yourself as well?

Q: Oh, I'm sorry. Arnaud de Borchgrave, CSIS. Could you perhaps give us a little indication as how – as to how one would compare the achievements of China and India, given that one is a democracy and the other is still under state control?

MR. INDERFURTH: I told you this would come up.

MR. LALL: Yeah. (Laughter.) Yeah, actually, I'd refer you to a paper I've written on the subject. I'm forgetting off the top of my head what it's called, but it was – I'll send you – I'll send you a copy of the paper.

MR. INDERFURTH: We'll send it around, too.

MR. LALL: But in essence – in essence, the big difference – there are many, many differences, obviously, but the big differences when it comes to infrastructure between India and China are the following two. The first is that in China, because land is essentially owned by the state, or has been owned by the state, the value accretion that happens to the land as urbanization takes place – that increasing value has been captured by the state itself, by municipalities particularly.

And notwithstanding some leakages – because it's not as if there's no corruption in China – notwithstanding some leakages, the bulk of those funds have then been reinvested into municipal, urban infrastructure. In India, because the land is privately owned, that accretion in value has not been captured effectively by the state. And so we are at a huge disadvantage in terms of the resources we are able to generate for reinvestment in infrastructure. That's one big handicap we have that has to do with the ownership structure of land, and the difference between India and China. That's one.

The second is that in China, they've made a very smart decision, as only they can make in their system, of using state-owned enterprises to build infrastructure at returns on equity that are actually quite modest. I mean, in some cases they may be negative, but by and large, until quite recently – I mean, until they had the latest binge in infrastructure building, so I'm not current on that, but let's say, until 2005 the infrastructure that had been built – absolutely world-class infrastructure, delivering returns on equity that are maybe in the single digits. So they're not loss-making, right, but they're not delivering a financial rate of return that would stand the test of any market. But they deliver an economic rate of return which is unquantifiably large.

In the case of India, because we are trying to involve the private sector, we are again constrained to deliver a financial return to them and we cannot play that arbitrage. So it makes our life much harder.

MR. INDERFURTH: We are getting close to – I see three hands. Let's take these three questions. One here, and there was one here and then one over here – so we'll take the three together. So we'll at least be able to have covered that number.

Q: My name is Reginald Smith, RCS & Associates, retired Foreign Service. You mentioned the IT and telecoms sector. It is my understanding that there is a respectable space industry in India, of interest to NASA, both in the private sector and the public sector, ISRO. Do you consider that – given that telecom can be both ground-based and space-based, do you consider that the space industry is part of infrastructure?

MR. INDERFURTH: Question one. There was one here.

Q: David Livingston from the Carnegie Endowment. I was just curious about – you mentioned the New Delhi metro project. And I'm kind of curious, what is the state and local kind of government and regulatory interface like that either allowed that to happen or that was an obstacle for that project?

And I'm curious and I presume that most projects really have traditionally been driven by mostly, you know, population growth and by economic concerns. And is the metro project, or projects similar to it going on in these sort of experimental cities you talked about – are they at all driven by social, environmental concerns? And what's being done to sort of scale that up to a larger – to a larger area of projects?

MR. INDERFURTH: And then the third question.

Q: Hi. My name's Danui Rudna (sp). I'm from Georgetown University. And my question's (in the same vein ?) as the last question. You spoke about administrative bottlenecks, and could you comment on them at different levels of government, like the municipal, the state? And also, could you comment on investment by Chinese firms in Indian infrastructure?

MR. LALL: OK, so great, we'll start with space. You know, after a 24-month exercise, the government of India is trying to decide, what is infrastructure? This is quite important for them because they want to regularize all the various benefits – tax, nontax – that different arms of government provide the infrastructure industry. Space does not figure in that list. So that's the sort of bureaucratic answer to your question. (Chuckles.)

On this issue of center, state, and Delhi – Delhi is obviously a special case because it is nomenclated the National Capital Area. It is not a separate state. It is actually a union territory, but is one of the very few that has a separate legislative assembly. The learning form the Delhi experience was really a partnership between the municipal government, if you want to call it that, or the union territory of Delhi and the central government.

And basically, it is – it is a model where the central government provides significant amount of budgetary support, because this is not, on a stand-alone basis, a commercially viable activity. And the – there are 30 cities that are now trying to roll out metro projects on a – in a framework which is called the Viability Gap Funding framework, where private parties are invited to bid to build the metro network to certain specifications.

And they are invited to declare how much fiscal support they would need from the central and state government budgets. That is in the nature of a capital subsidy – a one-time capital subsidy. So that – the expectation is that once you receive that subsidy, and then based on whatever fares they are able to collect, that they will be able to service the debt and the equity on the capital that they have infused.

So this requires intense and very close working between central government – notably the planning commission, the ministry of finance – and the local authorities and the state governments. And because the Delhi metro has caught the imagination of a number of political leaders in various states, I think this experiment in developing public transportation, and certainly in the 30 largest metropolitan regions in the country, could be an interesting one to watch.

The issues, with respect to administration, are very complex. I think the two-minute version of this is that, not unlike other countries, administrative services in India are – tend to be Balkanized vertically as well as horizontally. So vertically, they're Balkanized, partly because of the nature of our Cabinet system and coalition governments.

So different parts of the bureaucracy belonging to different ministries that might be the responsibility of different Cabinet members that might belong to different parties, tend, therefore, not to work in very close coordination – or as close coordination as they ought to. And the Cabinet's ability to actually force that coordination has been weakened. So that's the vertical Balkanization.

Horizontally, the Indian administrative services have traditionally been very, very strong and very competent administrators. But there are not enough of them. And so at the municipal level in particular, there is a huge, huge shortage of skills – somewhat similar to what has happened in Indonesia, where in Indonesia they've been very brave. They've actually undertaken a massive program of decentralization, notwithstanding the complete lack of skills at the municipal level. But the – in India I think we are very scared of doing that. And so we are – we are still struggling with that.

MR. INDERFURTH: Let me – (audio break) – that my opening remarks that Secretary Bryson will be traveling on his first overseas trade mission to focus on infrastructure in India. One of the questions that we asked you to address in our letter to you inviting you was: What role will be – what will be the role for the United States in India's infrastructure sector? If there – what would you place at the top of that list, in advance of Secretary Bryson's visit? What would you say that would be the most important thing the United States can be doing in that regard?

MR. LALL: Well, I think there are three things. First is we – to build on the dialogue we've already been having, I think, between Ministry of Finance and Treasury on exchanging ideas and providing support to the deepening of the debt capital markets in particular. And there that dialogue has actually resulted in some regulatory changes in India. And we are, in the next couple of months, going to be testing our ability to attract debt capital from the U.S. and other markets, and based on, you know, the deliberations of both parties in the past.

So I think there's a lot more work that can be done and needs to be done on that front. I've also found conversations orchestrated by U.S. Treasury, actually, on the U.S. experience with infrastructure financing, especially in municipal financing, very, very useful. And the intricacies of the federal mandates and how they are – how they are executed at the level of the states in the U.S. – very, very interesting, because you know, the U.S. system is every bit as complicated as the Indian – as the Indian system.

And so there is a lot to learn actually for us. And I've found out that some key government officials on our side, as well as financiers, have had their eyes opened, you know, when they understand how things are handled in the U.S. And it has helped people like myself to actually articulate recommendations to government.

So the point I'm making is that there is – there may be an impression in Treasury or maybe even in the White House, that there's a lot of talk and nothing happens. And I wanted to assure you that this talk is actually extremely valuable in ways that people don't immediately see and understand. So I would definitely urge you to continue that channel of conversation. That's one.

Second is in terms of hardcore business opportunities, I think that equipment supply and construction and specifically also focused on the renewable space – these are three areas that are huge opportunities for the U.S. The Canadians are very actively engaged; the Germans have been. I wish – and there's – that the Americans would also step up to the plate. There's much more that is available than I think that the American side of the table is actually appreciating. They need to be encouraged to engage in that dialogue.

And the third, which has always been very important – will continue to be very important – is that the U.S. is, by far, the most important financial partner and capital provider of different kinds for Indian infrastructure. So all the private equity – U.S. private equity players as well as the long-only investors, as well as the hedge fund community have played actually the infrastructure story very, very well.

And it's their knowledge of what happens in India, has given us access to a huge amount of capital that we otherwise wouldn't have. So that is something clearly – so the conversation between Mumbai and New York is a very, very important one.

MR. INDERFURTH: Great. Well, we'll conclude. I do want to mention to Dr. Lall that I – the $1 trillion plan of Prime Minister Manmohan Singh sounds like a big amount for infrastructure over five years, but there was in The Washington Post a reference to a recent report by the Urban Land Institute, which says that $2 trillion – $2 trillion – are needed for U.S.

infrastructure. So once we get India fixed – (laughter) – we want you to return the favor to help us fix ours. We've got the same problem. Again, this goes back to the great muddle through. We'll both be muddling through.

There is one other element – this is a segue – of infrastructure that was not mentioned. It has to do with human capital – developing human capital. When you leave, you will see out on our desk out here the latest of our U.S.-India insights, our monthly publication, which is entitled: "India's Economy: The Other Half." One great potential to further accelerate India's economic growth is women, and seeing women become fully participating partners of the workforce, and removing the obstacles to women performing that role. This would be a great advantage to India and a part, if you will, of the infrastructure that needs to be developed. So please pick that up. And let's thank Dr. Lall for his presentation. (Applause.)

(END)