

Infrastructure Planning and Management Public-Private Partnership for Infrastructure

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Advantages of Infrastructure Privatization

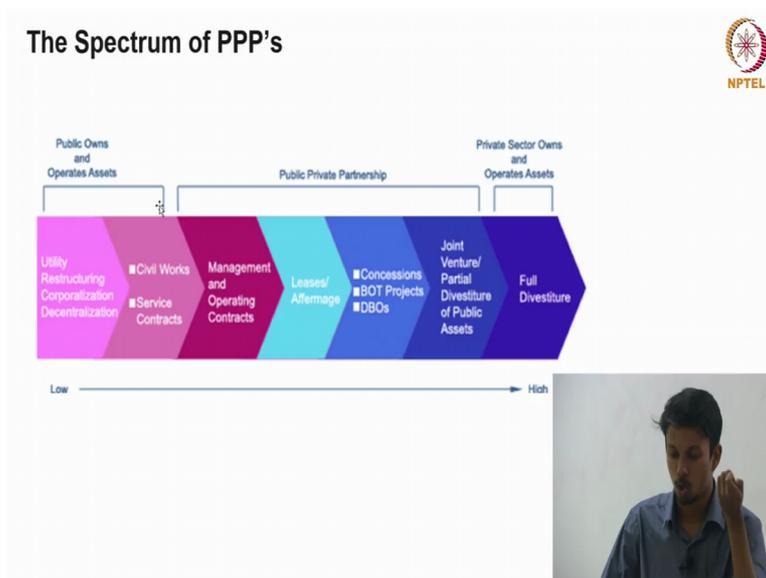
- Capital savings
- Operations savings
- Means of Financing
- Lack of expertise
- Better service



Hi guys, now I am going to talk about public-private partnerships for Infrastructure. First of all why do we need public-private partnerships in Infrastructure? We need public-private partnerships in Infrastructure because governments today are running out of money, they are running in debts and they cannot invest more on infrastructure. But we need infrastructure for sure. So this is why we are looking for public-private partnerships. We have here some advantages of infrastructure privatisation. One of the key advantages is capital savings.

Government can save capital, government can save capital and in operations also government can save, and there are many means of financing and in some of the areas there is lack of expertise from government, like in building an operation. So that is where the private companies come in and help them to overcome this. And they will provide the better service of course.

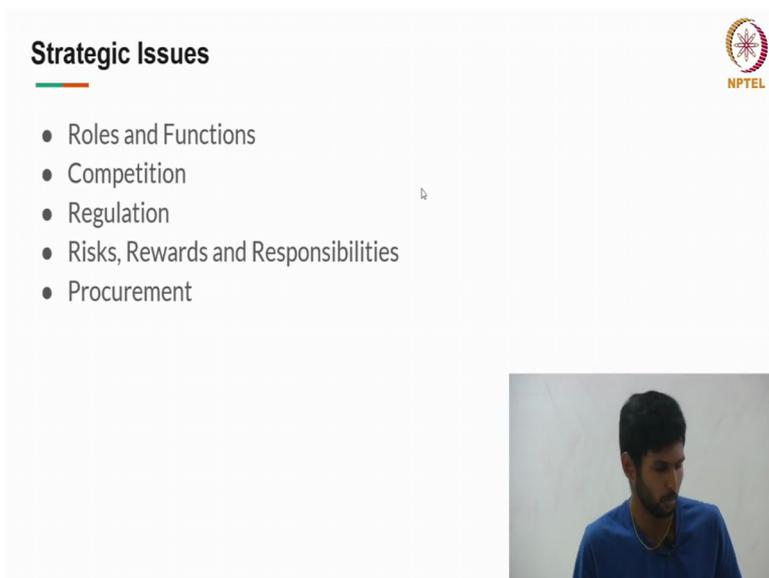
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Next, there is a wide trump for public-private partnership, ranging from public owned assets to the complete a private assets. The 1st of, 1st 2 are completely owned by public, but there are some of the contracts given to private projects like established contracts. For example, you can see IRCTC gave contract, IRCTC got ticketing contracts, are some of the examples. Then there may be corporatisation, decentralisation within the public assets. Now, moving towards public-private partnerships. Government may give management and operating contracts to some of the companies and there are some bliss is given and then comes transitional products.

BOT is one of the most important public-private partnership, moulds are going to discuss. And there are some joint-venture partnerships, then we move towards completely privately owned assets, like full divestiture, like you will completely sell the assets to the private sector. So, when we go from public would assets to the private owned assets, the risk obviously will increase.

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The slide is titled "Strategic Issues" and features a bulleted list of five items. In the top right corner, there is a circular logo with a star-like pattern and the text "NPTEL" below it. The list items are:

- Roles and Functions
- Competition
- Regulation
- Risks, Rewards and Responsibilities
- Procurement

Below the list, there is a small inset video frame showing a man in a blue shirt looking down.

Now there are some strategic issues involved there in public-private partnerships, my friend will cover those. We will see about the strategic issues in the Public Private partnerships. Your 1st off is the Roles and Functions. If we take roles and functions, then for each and every project, there will be different roles, like kind of operation management and then capital of finance, working capital, so these 4 roles should be allotted before the project starts. In the normal small project, they are going to go but if we take a big and complex project and everything, there will be so many sectors which we see in banks, designing companies, there are so many companies combined in the public-private partnership.

So that will be a main issue where they will have a problem of (())(3:15) and everything. And next comes the competition. Competition in the sense that when everything happens, the company will be selected, that depends on the prices, (())(3:31) and everything. But when we see in the larger scale, there is more investment, more companies will be able to participate,, where there will be national monopoly will come. So at that time, only the big companies only can participate. But in some cases, government will, like they will form a monopoly where more of them, they are not able to participate in the bidding and they can take the competition.

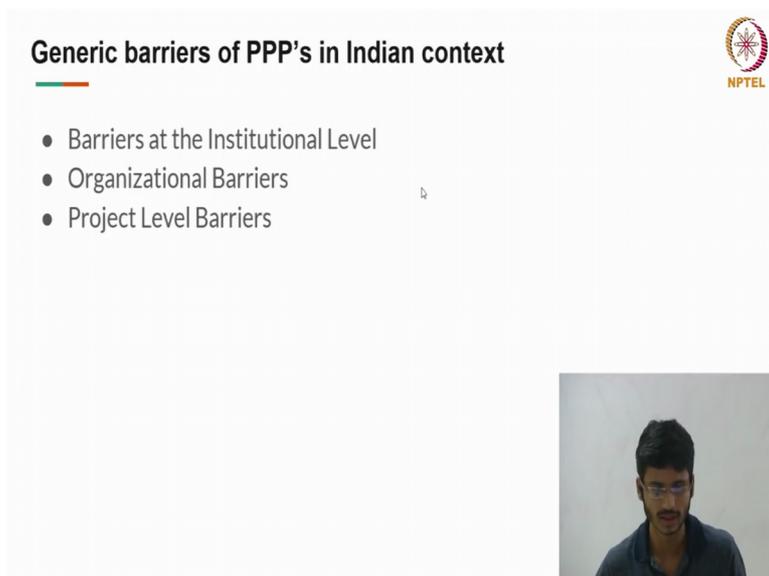
And in the case of regulation, in the case of regulation, if you will see, there should be some kind of regulations, rules and everything for the operator. Wherein, as the time increases, the rate also increases because the economic value and everything will increase. So in the starting itself, the government will, any government will form the regulations and rules, which should be followed in the timely manner. And if we come to the risks, rewards and regulations, they

are mainly categorised into 3 different parts. Business risk, Finance risk financial risk and political risk.

Business risk is mainly kind of makes, it mainly depends upon the operation cost, revenue, the company will not be able to make the revenue which they expected. Because is a demand they could not be able to get, all that will come under revenue risk. Then financial risk is a risk which they could not be able to pay the debts or for example they got this much amount of money and they could not be able to pay, after the revenue comes, they could not be able to pay the debts, that comes under financial risk.

Political risk and everything will come under the, where most of the political risk will have, it is about the insurance. Like they might have some political risk kind of thing. And (5:31) technology risk, environmental risk and everything. Next comes procurement. Procurement, like the (5:45) divided into (5:47).

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Generic barriers of PPP's in Indian context

- Barriers at the Institutional Level
- Organizational Barriers
- Project Level Barriers

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Barriers to Urban PPP's in India



- Contrasting Mindsets and Distrust between the Private and Public Sectors
- Lack of Political will toward Project Implementation
- Lack of an Enabling Institutional Environment
- Lack of Public sector Capacity to select and procure PPP Projects
- Poor Project Design and Structuring

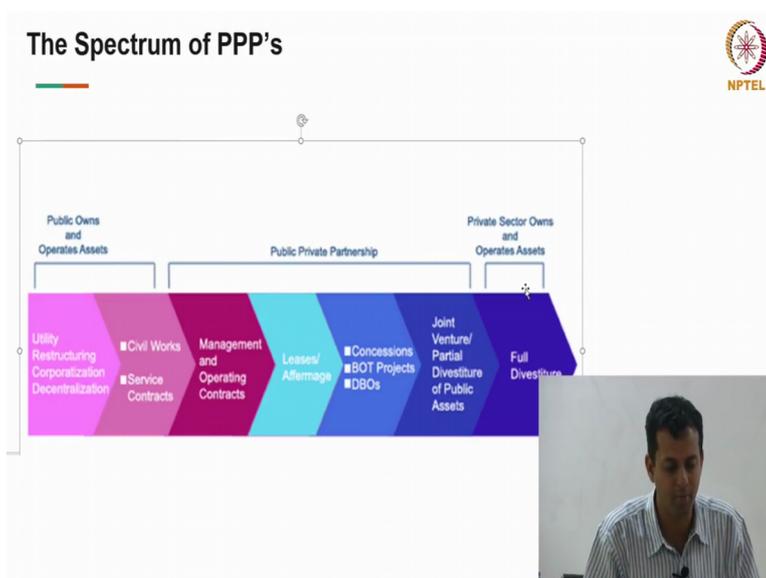


Yeah, so I will just go through the generic barriers to PPPs in Indian context. So there are 3 types of barriers, mainly, 1st is institutional barrier, so you hear in some cases we have seen that only the public sector is allowed to provide certain services, whereas there is no such law which prevents certain private sector from providing infrastructure services. Organisational barriers, so there is a lack of knowledge or conceptual clarity among the private and public sectors regarding the legal and financial structuring of the infrastructure policies.

3rd is the project level barrier, so it is very specific, in this case it is certain, sorry, certain private agencies are unable to get the operational cost back or breakeven. Next is barriers to urban PPPs in India. So 1st is the contrasting mindsets and distrust between the private and public sectors. So generally the government offices see the private agencies as contractors, they cannot imagine a private sector company or agency to own or operate a project. So there is contrasting mindsets between these sectors.

2nd is the lack of political will towards project implementation. So in some cases it has been seen that a project is backed, a project has a political backing, so it will, so the private agency involved in the PPP will perform well. So, here, this is the thing. Lack of enabling institutional environment, I have gone through this, so it is just same as institutional barriers. Lack of public sector capacity to select can procure PPP projects. So government offices, they in some cases it has been seen that the offices, government offices are unable to properly structure the financial structure of the project and sometimes it results in the overruns, cost overruns and the negotiations.

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Poor project design and structuring. So this is also similar to the project level barriers. In some cases like in, in some cases like Dabhol project, it has been, Dabhol Power project, it has been seen that the company was unable to get its investment due to poor assumptions that they made. A few aspects of this presentation I am going to talk about. That means, after this slide, 1st. So, when we say public-private partnerships, they respect our arrangement. So, essentially the way I define it, is in terms of risks.

So private sector involvement in infrastructure is not new, right. So at any project that you see, the construction fellow is probably a private sector operator, it is not that the government has its own machinery, over labour, own residents and they actually go ahead and construct. They come out with a tender, they pay for the project, but ultimately it is a private sector organisation that builds in most parts of the world. So, private participation is not something new, right. What is new is that traditionally the private sector was asked to take the design and construction work.

In the private sector, you design it for me, you construct it for me, if you do not construct it on time, then whatever penalties you will have to pay, if you do not construct it within the budget, then I am not going to pay you anymore. So you would take the design and construction process. Now what we are saying with PPP is that we are expanding that. We are saying that in addition to design and construction, right, also take the Financing risk, you go figure out where the money is going to come from, right, and also take the operations risk.

(())(10:12) you know just build the road and you will bother about who went on that road, right. You just finished the contract and you went away, right. Now you need to start taking a little bit more interest in actually operating and maintaining the asset. So, your risk spectrum increases, right, do not just take design and construction risk, take design conception risk, but also financing risk and operation risks, etc. And there are even permutations and combinations.

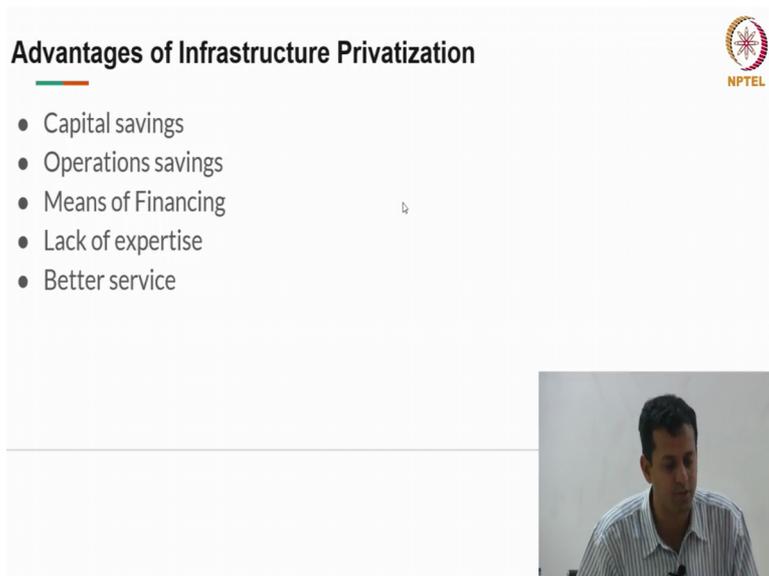
So the most, this is where the, okay, that is okay. So here the one in the middle, in blue which says concessions, BOT projects, DBOs, that is the sort of canonical PPP value go to the private sector and you say bring in money, design and build this project and operated for a period of time and then give the asset back to me. So the ownership of this asset rests within the public sector. Ultimately it is my road, I am giving you what we call a concession, right. Why is it called a concession, because I am conceiving the right to operate and build this road to you for a period of time.

Right, so it comes from the word conceding, so it is actually my right, I am conceding that right to you, so in the next 30 years, bringing the money, build it, operate it, etc., right. So we call it the concession. But after a while you transfer it back to me. Right, so that is where the T comes from, so BOT, build, operate, transfer, that is the canonical form of PPPs. But that need not be the only way form of PPP. So, operations, just a, operations and management contract, which is the red box, 3rd from the left is also a former PPP.

When you say that the asset is big, I do not need you to design and build it but maybe you can refurbish it, you can you know whatever, do some modifications on it and then continue to operate it, manage the asset over a period of time, that might be PPP as well. So that different kinds of PPPs and I do not want to get into the technicalities of what are leases, what are Affermages and etc. But essentially am a just think of it as PPP is involved, private sector is taking more risk in design and construction.

What exactly that more risk is Canberry and the most popular is the build, operate and transfer, where you bring somebody to build you know finance, build, operate and after a period of time, transfer the asset to you. Like most of our roads, power plants, all of them are built on BOT, right.

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The slide is titled "Advantages of Infrastructure Privatization" and features the NPTEL logo in the top right corner. The main content is a bulleted list of five items: Capital savings, Operations savings, Means of Financing, Lack of expertise, and Better service. A small inset video in the bottom right corner shows a man in a striped shirt speaking.

- Capital savings
- Operations savings
- Means of Financing
- Lack of expertise
- Better service

How old do you guys think PPPs are? We have known evidence of PPPs for about 500 years, right. Because there are some ferry crossings in the US, which were done typically on a build-operate-transfer model in the 17th century time period. Where actually the private sector came and said, I will build the jetties or docks or whatever on both sides of the river, I will operate, you know me or another private jetty operator can operate jetties. Which charge everyone some toll or tax or premium or whatever, through which I will recoup my money for building those docks.

And after a certain period of time, I will give those docks back to the government, if you want, you would run the ferries yourself or you want somebody else to run them. So, again private sector financing-building-operating infrastructure and then again we have the example of Suez canal, where essentially the enterprising group of Frenchmen went to the Badshah of Egypt and said, you know why do ships need to go all the way down to the Horn of Africa and out to the other side of Asia or vice versa, why cannot we cut through the Mediterranean and through the Suez and on the other side.

The Badshah said great idea but I do not have the money or the technical know-how to do it, so the French said that we will do it for you, conceive the right to us. We will actually build the Suez canal, we will bring in the money, we will build it, we will operate it, make it desilt and whatnot. And we will charge a toll for every ship that passes through and make our investment back and about 99 years later we will turn it back to you, right, so exactly the kind of BOT that we are seeing today was on the Suez canal. So, it is pretty old, the BOT, the old PPP concept, okay.

So the next question is what this slide deals with, these guys are explained it. Why do I do PPP? Right, off these if you had to pick one reason, what would you pick, 5 reasons, capital savings, operations savings, means of Financing, lack of expertise, better service? You to pick one. Means of financing. Okay, so everybody you go, you read, if you go to conferences on PPPs, right, if you read, what the planning commission said about PPPs or whatever, very often that is what takes it, right. They essentially say that I do not have money and therefore I am going to do PPP, right. And see whether it works, okay, it does work some I know.

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Advantages of Infrastructure Privatization

- Capital savings
- Operations savings
- Means of Financing
- Lack of expertise
- Better service

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A small video inset shows a man in a striped shirt looking at the slide.

Privatization Options

Government Control Private Sector Control

Govt. Owned Corporatized EPC / O&M Contracts BOT BOO

NPTEL

A small video inset shows a man in a striped shirt looking at the slide.

So, they say I do not have money, I am going to going back there. Okay, so, let me do this that. I will then shipped to my presentation, where it has more or less similar flights. I am going talk about this slide and the other slide I want you guys to keep in mind is this slide,

Barriers and so on. So we will talk about those and I think we will have... So there are spectrum of ways of doing projects, you can have completely government owned, you can have just the government giving of contracts, which is the engineering and construction, what all you can have come BOT or even fully privatised. I do not need to transfer back the assets.

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The slide contains the following handwritten notes and calculations:

- FRBM
- 100 Cr (circled)
- 80% (circled)
- 20% E (circled)
- 8% (circled)
- 80% — 20% E \Rightarrow 13.6%
- D
- 12%
- 20%
- Rs 50
- Rs 40
- 100 Cr @ 8% \Rightarrow 80
- 85 Cr @ 13.6% \Rightarrow 115.6

A small video inset shows a man in a striped shirt speaking.

Okay, so why do we need to adopt PPPs, what are the advantages? Right, so number-one advantage that comes to everyone's mind is finance, okay. There is little bit of a problem, right, and therefore it seems logical, right, the private sector is bringing in money, right, it would have money, is not that why I should do PPP, okay. By and large, that is not completely the completely logical argument, but that one sort of nuance which I want you guys to think about, right and here is how it goes. Okay.

100 crore project, alright, 100 crore, I do not have the money with me and therefore I go to the private sector, okay. The private sector says, okay, we will do, you know, same thing we just talked about, 80 percent debt, 20 percent equity, cost of debt is 12 percent, cost of equity is another 20 percent and so this works out to about 13.6 percent. So now the private sector says, I need to set tariffs, toll rates, right. So that I will get 13.6 percent return, write. So I need to balance, I know what the costs are, the costs are fixed, I can play around with the revenues, right, I cannot play around with demands, right (16:33).

So let us just say for the moment that I set I sort of set Rs. 50 per vehicle tariffs, let us just volume that there are different types of vehicles and all of that, flat Rs. 50, alright. Now the thing is, right, you do not have the 100 crores, right, that will be started with this. But what if

you have got an you have borrowed the money yourself? Right, instead of going with the private sector, what if you have gone and you have borrowed the money yourself, okay. So let us say you might go to the World Bank, okay or you went to IDBI or whatever, right.

And let us say you went to the World Bank, the World Bank is a development institution, so they are looking at interest rates at probably a little bit lower than the commercial interest rates because they are looking at Housing and development in these kind of developing countries. What if they actually give you all of these 100 crores at 8 percent, okay. What if they give you all of those 100 crores at 8 percent? What could you do to these toll rates? What will happen to these toll rates? He will cut down, right, I do not need to charge Rs. 50, it does not need to be 13.6 percent.

I can charge, I do not know, Rs. 40. So which one is better, charging Rs. 50 or charging Rs. 40? Charging Rs. 40, right, all of us get to pay Rs. 40, okay. So the point is if I do not have money and I go to the, and I do not have money now, so essentially what I have done is I have looked that my account, our treasury and we do not have money right now, I still have the option to borrow, right. I can borrow and I can continue to pay over a period of time. It is like buying a house, right, you buy a house only after you have saved up all 4 crores to buy the house or do you buy the house when you have for the down payment and finance it as you go right.

So similar logic, I do not have to save up for the entire road to buy the road, right. If I have a little bit of money to keep going, I can continue to pay over a period of time and I can collect tolls, just the same as anyone else. Right. But I can become I can charge less for the tolls because my interest rates are cheaper. Say, for whatever they lend to me, government interest rates are always cheaper everywhere in the world, because government is safe, right, they are not going to default on payments, right.

So if it does the question of money, right, PPP is actually the wrong option. Right, you should look at borrowing yourself. You do not have the money now, then it is better off that you borrow an 8 percent, rather than ask a private sector, who is also borrowing. It is not that in the private sector the money is starved in their back pockets and they are putting on the projects. There also borrowing 80 percent at much higher interest rates and that is driving the cost of the project up and that is driving the cost of the services up.

So, financing or say cannot be the reason, okay, so the real reasons have to be one of 2 things, right, one is that something in government, particularly in India, I am sure there are things in Germany and France. Which recall as FRBM rules, right, fiscally responsible budgetary management rules, okay. What it does is it limits the amount of money that a government can borrow, right. So the government takes the view that, no problem, right, I will get more interest rates, let me sort of borrow indiscriminately.

Then essentially what you are doing, you are putting on a loan repayment ordered on the future generations. Today you happily borrowed, right, crores and crores of rupees, tomorrow you have got to voted out. Right, but the burden of repayment will last for the generations to come, which of the citizen makes sense, right. So you have to put some cap on government borrowing, which is what the fiscally responsible budgetary management rules try to do, okay. So, if you have already reached that cap on borrowing, then there is no question of you able to borrow in 8 percent, you can borrow anymore.

In which case you are left with a choice of, let the private sector borrow at 13.6 percent, will have a project or let me wait 5-6 years, until I repay enough clothes that I will be able to borrow more and then I will be build this project. At that point of time, maybe you cannot 6-7 years to build a sewage treatment plant or a water supply project. So, in those cases it makes sense. Say I cannot borrow, so let me go with the private sector that is one sort of reason. But the 2nd reason is that, yes the private sector will borrow at 13.6 percent, I understand that, right.

But somehow because they are more innovative, they will actually come up with efficiency that will bring the overall cost down. So because they are likely to invest in, they have better people, better access to technology, what not, maybe they can actually builders at 85 crores. Right, if you take 100 crores for me to do it, but these guys having desalination, but these guys understand the latest desalination technology, bringing lean construction principles, building information modelling, what not, put in all of this innovation, they are able to incentivise and attract higher collective people because they pay higher salaries and therefore their operations are going to be much better.

So for whatever reason, well to cost me 100 crores, it will cost them only 85. So now the comparison is, 100 crores at 8 percent, and what tariff that leads to or 85 crores at 13.6 percent and it could be that 85 crores at 13.6 percent could be serviced to the Rs. 40 tariff, because it is probably 85 crores. Right, and therefore the public sector has net net more

efficient, I am sorry, the private sector is net net more efficient. So, tell more expensive for them to borrow, but they are somehow evenating and bringing the overall cost down.

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Why do we need to adopt PPPs? What are the advantages?

- The Public sector often has some shortcomings
- Finance - in some cases the public sector does not have financial resources to build infrastructure
- Projects are often heavily subsidized leading to an increasing burden on the exchequer
- There is sometimes a lack of expertise in the Public sector when it comes to executing large and complex projects
- Public sector projects are sometimes characterized by poor quality of work, frequent service disruptions, low levels of motivation and incentives, corruption, leakage and theft, selection bias, parochialism, vested interests and power politics



In that case the PPP makes sense. Right, so when you go into the private sector, let us all understand, that the private sector is also going to borrow money and that money is going to be more expensive for them to borrow. So, if you want the private sector to do all of that, there should be some benefits, right, for borrowing more expensive capital, they have to bring in a certain benefit, right. And so, I do not know how this is going to look but private sector has some shortcomings, Finance we talked about, there is sometimes a lack of expertise in the public sector, right and therefore that makes the driver sector more efficient.

Things like, you know, all of this, power politics, selection bias, correction, whatever. So when you assume that, much of that will go away when private sector comes in, so more efficiency will come in, then it makes sense to go for the private sector. So the big advantage of private sector is efficiency, not their ability to bring money. They are actually less efficient in breaking in money than your government. For instance, if you look at toll rates today of course, private sector does not set those toll rates. NHAI, National Highway authority that the toll rates, so to travel any national highway, you are paying roughly similar rates, right.

But for me to be able to settle at 40, the project needs to go at that 40 no. If the project will work only at 50 and I settled at 40, nobody will come forward. So, for me to even be able to regulate, right, I need to get to a point of efficiency where 40 is possible. I do not want to regulate that, to make sure that this guy does not windfall profits by charging 50-60, that is

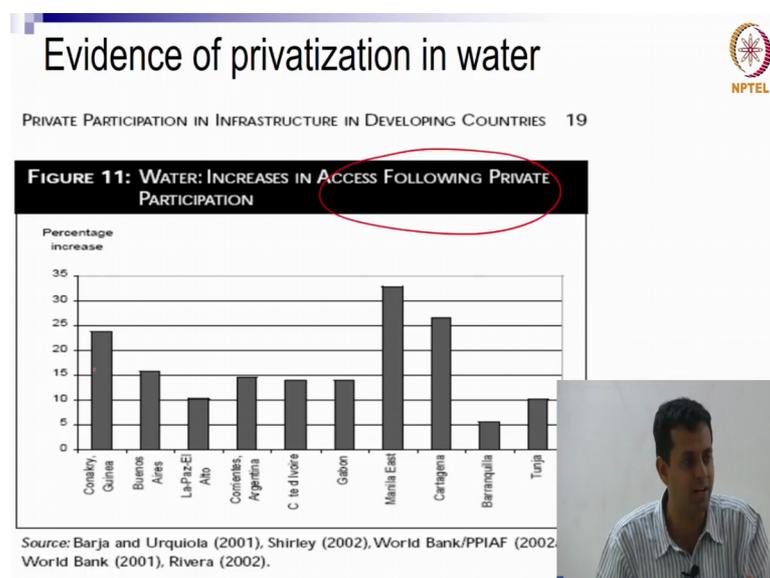
another problem with PPP. Right, I give you a water PPP, you are going to supply water to the city, without water you will all die.

So suddenly you say, fine, I am going to charge you Rs. 5000 a kilo litre. You do not want my water, fine, knowing full well that you have no option, right. So PPP sometimes have this monopoly characteristics, which is whether regulation comes in. So that group had a slide on regulation, you might have to regulate the PPP. Because otherwise the private sector might just hold people to ransom. So you can regulate tariffs, quality of service, all of those kind of things have to come in, that is why TRAI does the regulation in telecom, so you have regulators in these segments.

So you try to depend on the budget arrangements, right. So for instance the PPP might be built on an annuity norm. What do the annuity mean, you build every six-month, I will give you a fixed payment, as long as the road is of some acceptable quality, roughness index, all of that. So, on that scenario, private sector need not calling toll, they are not making toll revenue. So, in certain cases, the private sector still collect the toll but hand it over straight to NHAI, they adjust the operators to collect the toll.

So, there are all kinds of arrangements that are possible, right, depends on this thing. So, these are the things. So, I think it is something to think about carefully, so we looked at what is the PPP, why do we need PPP and of course there are some channels, there are certain risks and we are going to to cover all of those risks in the next module. Otherwise there are some examples of advantages, right, of the private sector.

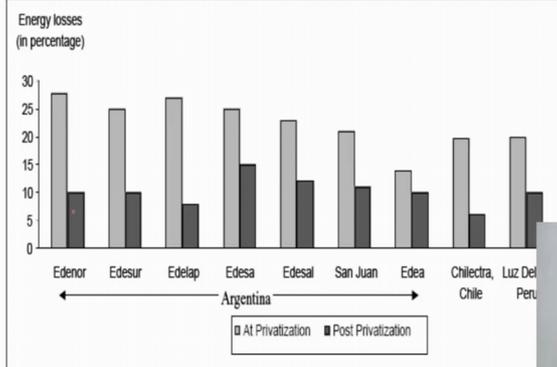
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Evidence of privatization in energy



FIGURE 14: LATIN AMERICA: REDUCTIONS IN ENERGY LOSSES FOLLOWING DISTRIBUTION PRIVATIZATION



Source: Feiler (1999). Losses include both technical and non-technical losses.



So, for instance this is a graph that says, following private participation, the amount of water available has increased. In other words, the private sector has been more efficient, it might have been more costly but the amount of water that has been made available, in other words water that does not get click on, that does not get lost has been reduced considerably. Right, so the value of that outweighs the extra few percent of the interest that the private sector charges. So there are all these graphs, I think the reason is an energy, so, we look at privatisation and post-privatisation, the energy losses are reduced. Right, so therefore there is more power within the system and that efficiency gain roughly outweighs. So this kind of efficiency is required.

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Pitfalls with Private Participation



- Despite these advantages, PPPs have experienced turbulence in the past.
- The following two slides graphically describe the recent worldwide trends with respect to PPPs
 - As the graphs indicate the number of PPPs gradually increased but have been falling in recent times.
- A large number of PPP projects have been renegotiated
 - Although not many cancellations/expropriations
 - This might have affected investor confidence



If you do not get any efficiency benefits, then it is just a more expensive project. So a large number of PPP projects are being renegotiated, cancelled, they are not really wearing themselves out. So this is the graph that looks like, sometimes in the mid-90s, PPP started to speak and then after that, almost everywhere in the world, it started to come down. Of course this is a very dated graph, in India there is again about 2007, 2008, 2010, lots of PPP is have been enacted, post that things have come down a little bit, now it looks like the infrastructure is picking up.

To some extent there is a cycle but also there have been several problems with PPPs, right. One of the problems is of course the fact that you have to charge a tariff. And that is sometimes is very difficult, right. So people ask the question saying, am I not already paying taxes, is it not the government's duty to build roads with the taxes that I pay, how come you are also taking my taxes and charging me for this road, water is a basic right, how can you price my water, right. So you have all the challenges that you have to resolve. You have to talk to people, try to see if you can convince them with these kind of issues.

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Problems faced by Private provision of Infrastructure

- Raise in Tariffs
 - Very often, in order for the project to be economically feasible, the private sector is forced to raise user charges from preceding levels, leading to unrest.
- Unemployment
 - The private sector often operates with a reduced but more efficient workforce, leading to a loss of jobs.
- Unequal Access to the Poor
 - Since the poor are often not capable of paying for services, the private sector may not see the value in including them in, say, water provision, as a result the poor may be un-connected and might suffer.
- Ideological issues
 - Citizens often perceive the responsibility of delivering infrastructure to be with the government and therefore ideologically oppose privatization of infrastructure.



Very often the public sector is operating in efficiently, right. So there are far more people in a public sector organisation, than there needs to be. So when the private sector comes in, what they do, there are doors about profits, so they only need 2 people per thousand water connections and you already have 4 or 5 people, they are going to fire 2 or 3 people to keep their costs down. Or maybe there will be unemployment, if the private sector comes in, this is another concern. Right, because the private sector is interested in making a profit, right, will they be interested in servicing people who may not have the ability to pay.

So classic case in Latin America, sometime ago, when people had not thought these things through, was the sort of give out the water supply contract. Right, and you find that the private sector would only kind of connect the rich provider because only those providers would pay the money. Relatively poorer providers, anywhere you go, they are unlikely to pay you money, so you will not even bother correcting them. And that leads to equity, inequity inaccess and so on.

Ideological issues, right, is not this the top of the government, should private sector be providing these services, particularly a foreign private sector should be providing these services, is my money going away from my own pocket to the pockets of a foreign person for services that the government should provide. So these are the kind of ideologies that people might articulate. And these things if not really understood, dealt with, mitigated, could have, could lead to common sort of problems, right.

So many of these kind of issues. Including the kinds of issues that team brought up in the last slide. Right, they essentially said that look him up public-private partnership might fail if the project is not structured well. Sometimes if you run through, you say, the return on investment is only 10-11 percent but somehow let us convince somebody to do PPP, sometimes your initial study that are done are very poorly done and we will see a couple of examples in our class later on where it looks like you make a large amount of money but that is because your surveys of the number of people travelling on the road, etc. are very poorly done.

So poor project structuring, the fact that from a regular tolling perspective, now in India, almost every state has a infrastructure development act. Right, I have tried one for Tamil Nadu, something called as Tamil Nadu infrastructure development act, which talks extensively about how to do PPP is in Tamil Nadu. And a coupling into something called as transparency intender's act, how do you prepare PPPs in Tamil Nadu. So because you have that framework, everyone is clear how to do PPP. But if not, that there is a lot of hesitancy in terms of doing PPP.

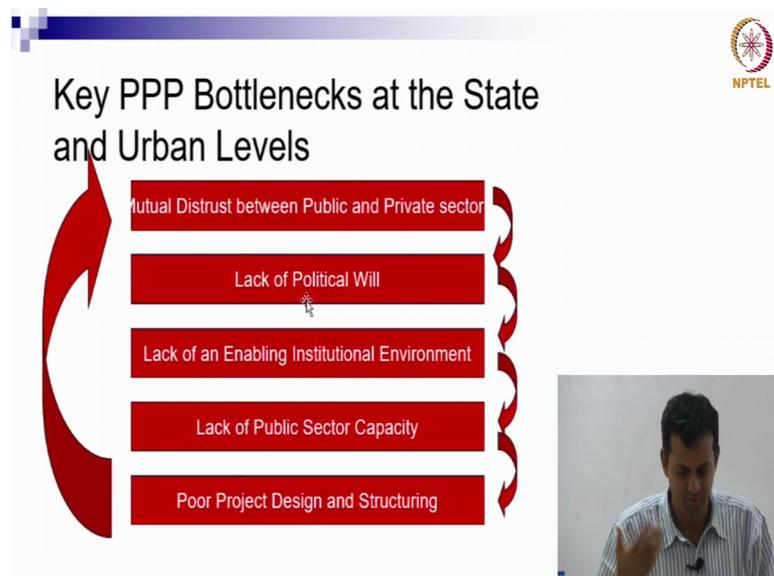
Right, so very few PPPs comes to the table, people are not clear, right when I get caught by some audit agency for doing this. Political willingness is another important aspect because ultimately it is the elective representatives who wants to take the decision. Right, the ministers of so-and-so must approve that this project must be done on PPP. So, you need Political willingness to do PPP. So all of these barriers, that can, that can play havoc with

PPP. Furthermore of the story in some sense is that if you go back to the old estimates, the amount of infrastructure that India needs to build a future, we have already seen that.

In my view it is just impossible for all government departments to come together and build the infrastructure. I just do not think we have enough capabilities, resources, whatever to do that. You just look at what NHAI is talking about, what the Ministry of energy is talking about, what we are talking about under Smart cities, what we are talking about under group Amrut, under PMA, just put all of these together. Right, the amount of work to be done is mind-boggling.

I have to think that government organisations can bring in the resources, finance, manpower to do that, I think it is impossible. Right, so we want to continue developing at the rate at which we were developing, we have to bring the private sector in. So in my mind, that is relatively clear. The questions when do you bring the private sector in, only in cases where you can clearly establish the efficiency, right and also some of the barriers to bringing in the private sector will have to be resolved.

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So you can have this mix of publicly funded projects that the government undertakes, perhaps a little difficult to make revenues in rural areas and privately funded projects, so that hand-in-hand we can actually start developing. Okay, so that is the key public-private partnership story. I do not think I have any other key slides that I want to come. I will put all of these of there. This was the slide that the group put up. So these are some of the barriers to PPPs. Pat,

the fact that there is a lot of distrust between public and private sectors, people say PPP, where is the 3rd P?

There is public-private partnership, often very little, partnership, so this public and private sector coming together. There is sort of analogy, I am not a big fan of this analogy but a lot of people write about PPPs as analogous to marriage is, right. So long-term commitment between private and public sector, right but these PPPs are more marriages and convenience at test, right, the ones that we see. Some of these are the issues that we look that. Yes, so I think we stop here, with a little bit of understanding of PPPs. Again the slides are there, you can have a look at them, probably add a few more points to your understanding.