Infrastructure Planning and Management
Case Study on PPP Project - Delhi Airport

So, we are more or less done with like concepts of this class except tomorrow we will do a bit of simulation all of that. So, we want to just look at a few projects and sort of talk a little bit about what is happening on these projects and based on what we have learned recently is there something that we can do about them, right? So, the two projects that we want to talk about are today will be the Delhi Airport and the Tirupur water supply. So, we will start with the Delhi airport. So group 1, one of you come and present , just tell us about the Delhi airport and then we will discuss a bit.

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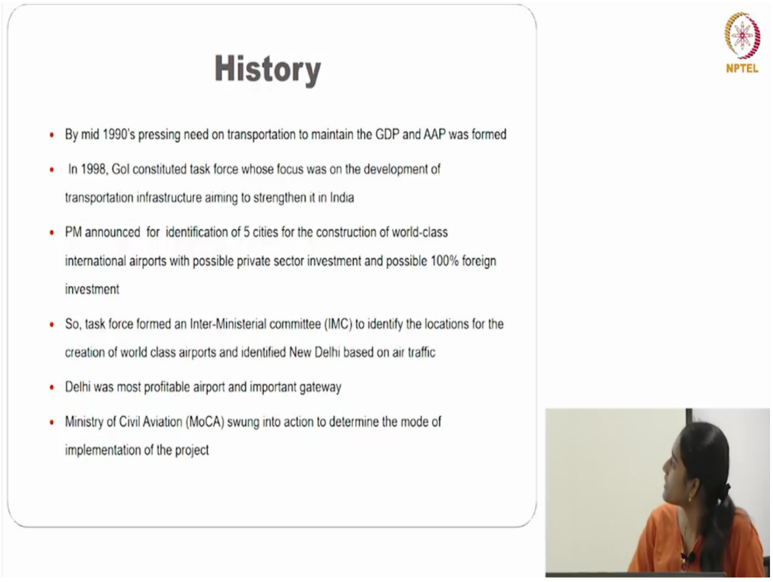

I will be representing Group -1 and I will discuss on Delhi International airport. So, first I will go through how, what is the history during 1990s in India. because of some liberalization reforms the growth in GDP growth a like went up to 7%. In order to maintain that our government has like constant need to maintain the GDP, so they thought transportation infrastructure like they had more scope on transportation infrastructure.

So, in 1998 government of India formed a task force for the development of transportation infrastructure mainly for the transportation infrastructure. So, the Prime Minister then announced it for the identification of places five cities for construction of airports, with like because they don't have so much funding they thought with possible private sector involvement and hundred percent foreign investment. And so this task force was main aim is to identify these places and they identified New Delhi based on the air traffic, at that time it was like around 21% or something.

So, they thought New Delhi was good to create this world-class airport. It was also most profitable airport. Then the Ministry of civil aviation Department (MOCA), a bit prior to this a, sorry that was AAI was formed that was merging both national and international airport that is where (())(02:23) formed AIA. And now the MOCA like it came into the action for how the project should be implemented and all.

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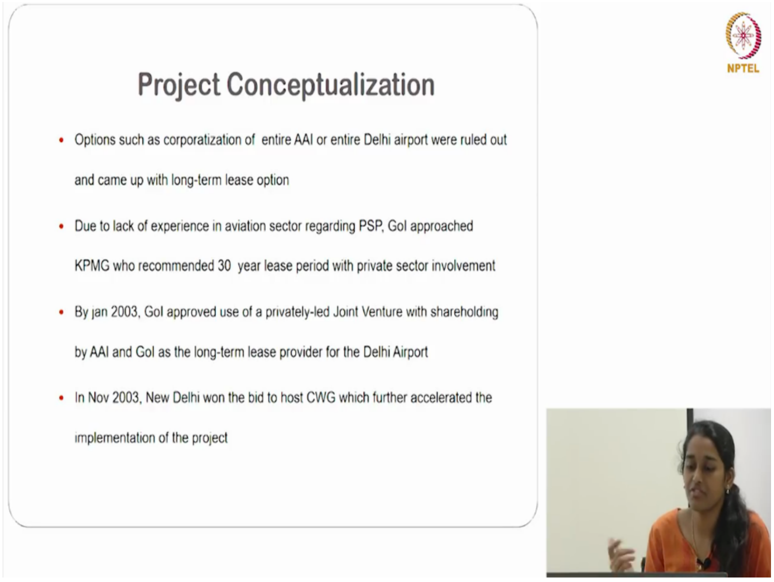

So the project, how the project went on is, they thought of many options such as corporatisation of like entire AAI or the discussion is still going on but they like ruled out the option because there is no proper regulatory framework or legal framework for the like for complete corporatisation. They even ruled out entire airport giving it because the government was much more interested in the projects and the profits involved in it. So, they thought a long time, long-term lease option might be a better option.

And since at that time even the private sector participation is much more present in road sector but not in aviation's. So, government doesn't have that good idea on how the how it works so they approached KPMG, it is a consultant company, so they recommended like for 30 years lease period with private sector involvement. By January 2003 and though the AAI and government of India they were like much interested in how the project will go on, so they thought they want involvement in the project then the Supreme Court gave a rule that like approved use of private-led joint-venture company.

So like they thought of forming a joint JVC with shareholding by AAI and GOI both for a long-term lease provider. And in the same like within nine months, when this bill was accepted like within nine, like 10 months again in November New Delhi won the bid for to for the implement like to host Commonwealth Games like which is much more needed for the completion of project much earlier.

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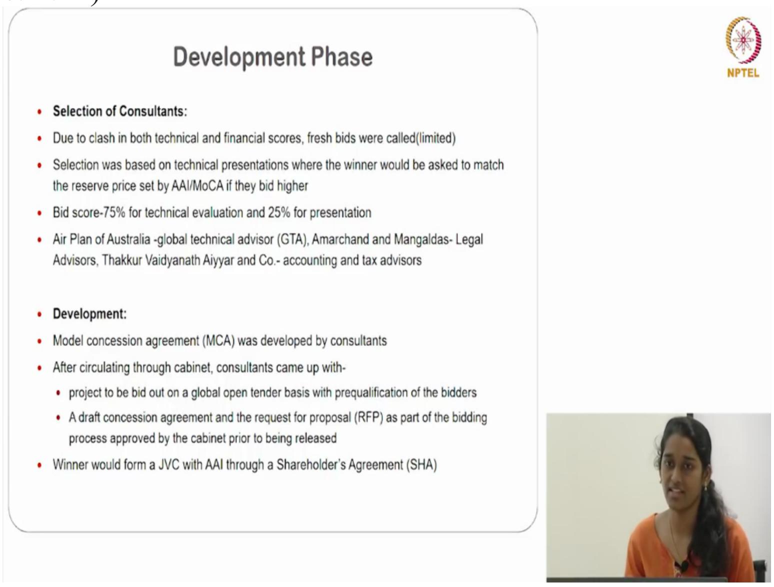

So, this was the development phase of the project. The first it, like some EMOG was formed for the how the process should be taken care of. And they thought first selection of consultants was done firstly they some prioritise based on technicals course and some prioritise on financial course but there was a clash. So, again they called for a fresh bid which is like on a limited basis, only the top three or someone, only those three bids were called and based on their technical presentations the winner was announced.

And the bid score was like 75% for technical and 25% for presentation. And after the bidding was done like they even mentioned that winner should be asked to match the price set by the AAI. If they are quoting higher they should reduce it to the price set by them. The final the total advisors are like for global technical advisors, legal advisors, accounting and tax advisors. So next process is once the consultants were selected the next process is development.

So the consultants came up with this model concession agreement which included like most of them and this was sent through the Cabinet for approval and then many objections came and many issues came up with this concession agreement. And finally they thought they came up with one certain rule set, project for the development should be done on a open tender basis with prequalification of bidders and a request for proposal and part of bidding process should be approved by Cabinet prior to being released and some other prerequisites were mentioned by the consultants.

And after the selection of bidder winner would form a like as mentioned before they would form a joint-venture company with AAI with through shareholders agreement and is once they win they will be given for development and operations and management of airport they will be handed over.

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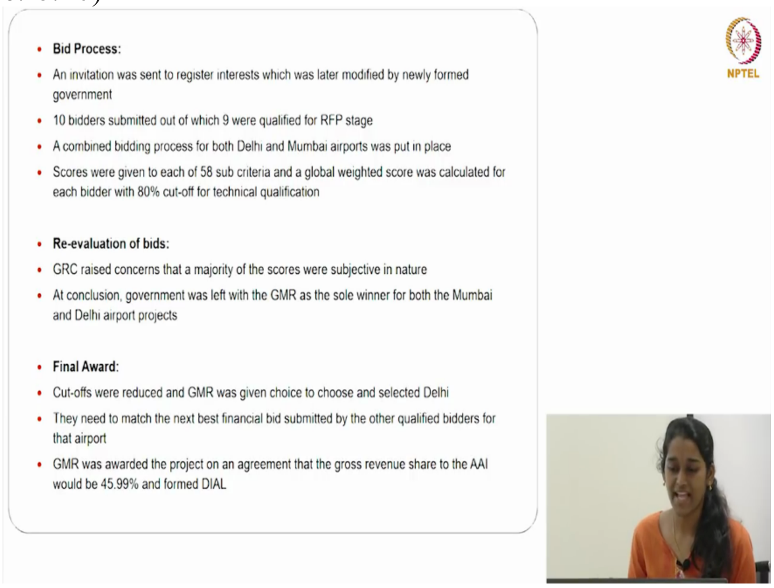

So, this is how the bid process went. Initially an invitation was sent to express interest, to register interest but during that time it was like late slightly extended due to elections and the newly formed government made some changes, the newly formed government made changes so that it reduced cap for foreign investment but it raised cap for equity participation from Indian domestic lines itself.

So, even though out of all these 10 bidders showed interest of which nine were qualified for the next stage. During that time Mumbai airport modernisation was also like came into existence so they thought maybe the combined bidding might reduce the cost and combined bidding was done. Scores were given to each bidders based on like there are technical criteria, financial criteria. Technical criteria they included some two main criterias but scores were given to all 58 criteria and like they thought of some 58 sub criteria and score were evaluated for each thing and they put the cut-off as like 80%.

So, this resulted in two major bids, two major companies with more than 80% cut off. In order next the revaluation was done. The government proposed like GR they formed GRC in order to check how this is going on. So, then GRC raised concern that this course were not subject, was mostly subject to and they didn't include IMG which was formed earlier. So, they thought maybe they will, they thought, they consulted some GETE another like engineers group of engineers which are highly qualified.

They again evaluated and finally after evaluations they only one the previously which were like two bidders which were more than 80%, one was reduce it to like 70 or something and the other one was more than 80. So, only one bidder was left for both airports. So what happened is final award they thought they reduce the cut-offs and GM the top the top one was GMR and it was given the choice to choose and select like it can either choose Mumbai or Delhi and it selected Delhi. So, and the many were, many petitioned in the court that they were not even aware of the cut-offs so they might be better and so the Supreme Court came up with they should, the GMR should match the next financial, best financial bids submitted by other qualified bidders for Delhi airport.

And so the next was I think Reliance the highest, so they were supposed the GMR the GMR was supposed to agree on revenue share up to 45.99%. And then they formed DIAL it was some I don't remember the exact.

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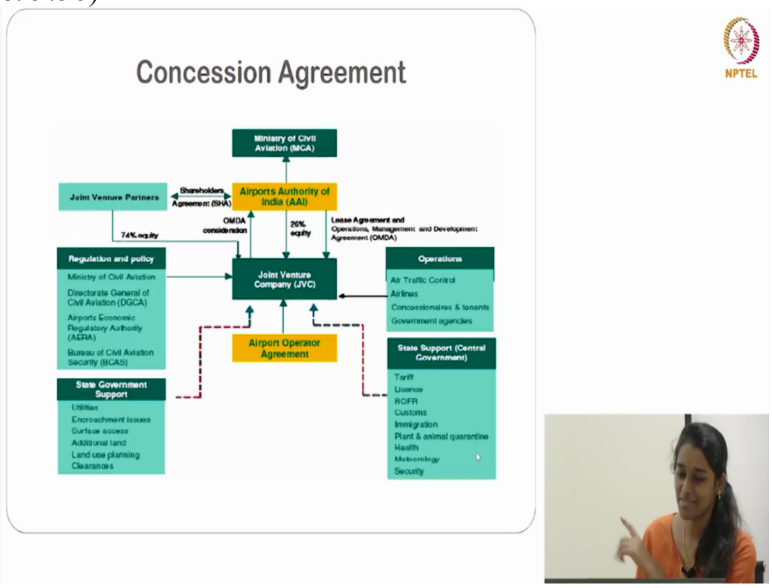

And then comes the agreement, concession agreement this is just an overview.

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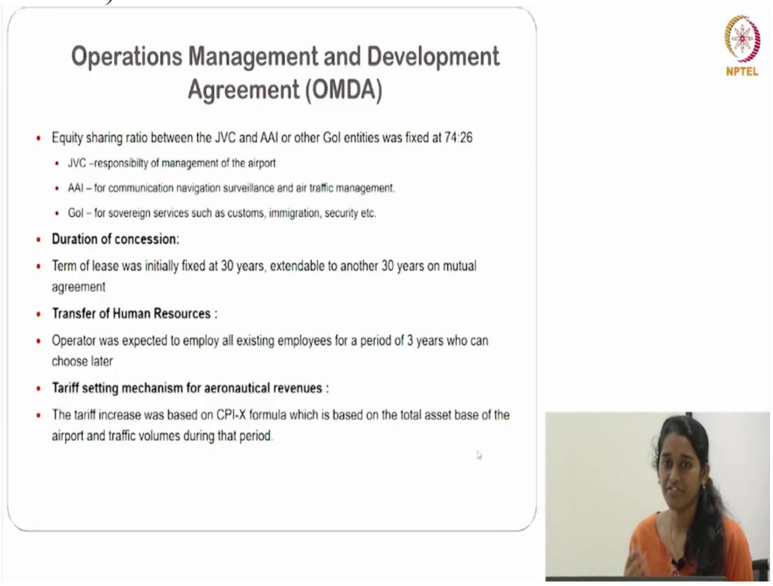

And I will go in deep. The first one is Operations Management and Development Agreement. The concession agreement like consisted many, this was one. In this they mainly focuses on equity sharing ratios between JVC, AAI and like what are other GOI entities which are present there and they assigned responsibilities for each and it also included the duration of concession which should be which is initially fixed at 30 years but can be extendable based on the requirements to another 30 years.

And transfer of human resources which was that they should employ all the existing employees for three years and later which the employees can either choose a retire or it is based on their wish.And tariff setting mechanism for aeronautical revenues, this was for tariff increase in future it was based on a formula CPI-X formula they took into account the total asset base of airport and total traffic volume. So it included both.

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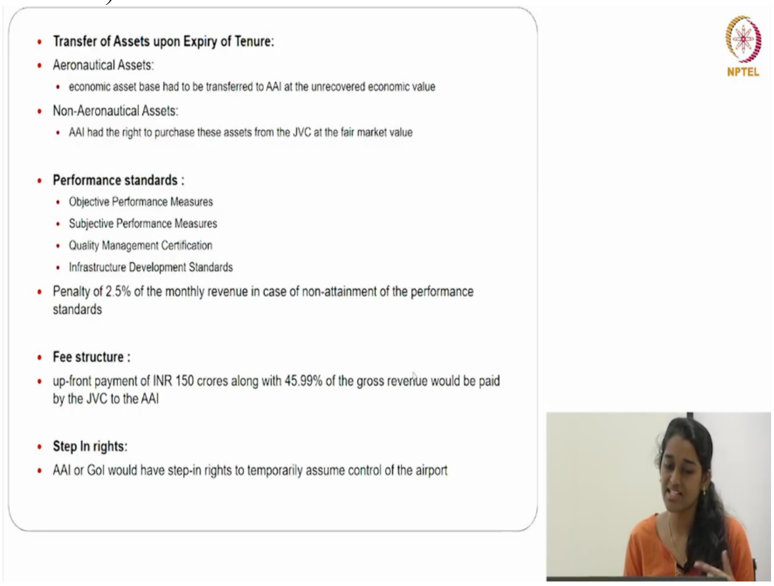

And after that transfer of assets upon expiry of tenure like there will be both aeronautical assets and non-aeronautical assets so they thought how the both assets will be transferred to AAI. And the other one performance standards these performance standards like for each objective performances like how the airport is performing in some situations like subject to means how the survey there was a survey based on how easy is it to calculate to locate some like finding ways through airport and all that such things are and there was minimum cut-off on subject to performance measures.

Similarly quality management certification, they want JVC to get a ISO standard certificate and infrastructure development standards these are all some performance standards. In case the its unable to meet those criteria as mentioned before they should give a penalty of 2.5 months until it is rectified. And the fee structure was that for like 150 crores initial payment and along with as mentioned before 45.99% revenue share to the AAI and step in rights in case of any emergency the AAI or government of India they thought even of about the emergency issues.

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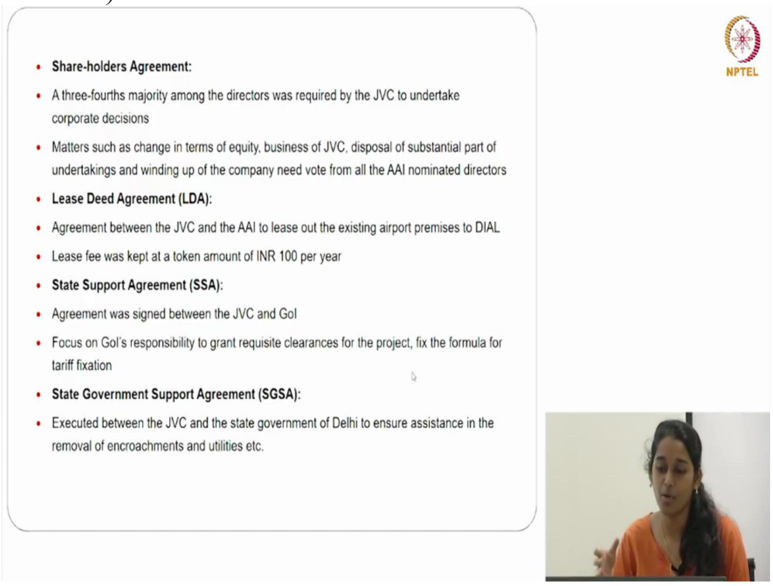

And other agreements include shareholders agreement, this was that JVC will be majority like three fourths majority and they can take decisions but corporate decisions but in case of any change in terms of equity or business of JVC change business of JVC or anything such thing should be like all these things should have votings from all the AAI people but major relations were like those can be taken by JVC.

And there was other thing called lease deed agreement, this was between JVC and AAI like for the existing airport premises for to DIAL. And there is like state support agreements, state common support agencies and this were others.

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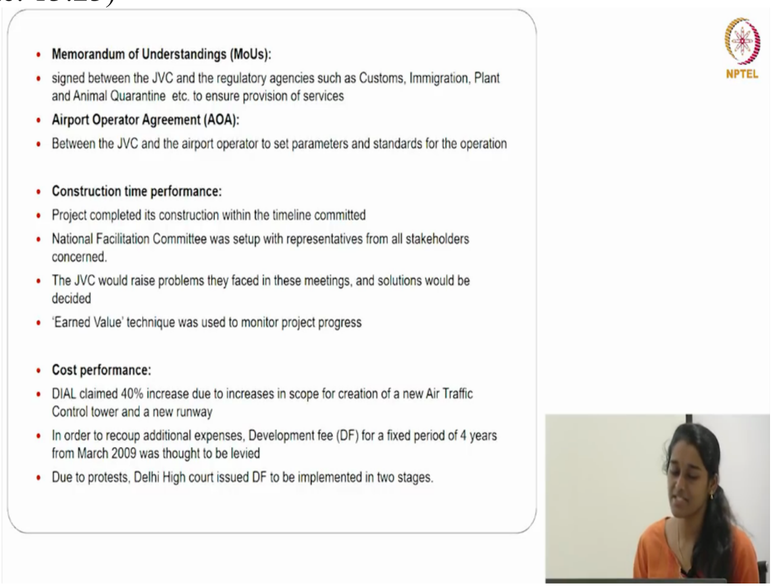

And so the final thing is construction time performance, the project was completed within the timeline and with much faster pace. The there were many complexities in the project while the JVC had thought of, so he approached the Prime Minister and he formed the Prime Minister formed this NFC National facilitation committee which has representatives from all the stakeholders which are concerned with the project, so the JVC would rise any issue it came up and then they will be solved in the project itself.

The contracts are used earned value technique in order to monitor project progress and the cost performance initially they claimed that it will be something and but later they thought they said it will be 40% more than that. It is because of creation of new air traffic control. In order to maintain these like recruit based additional expenses they thought AAI thought they will levy a development fee for four years but there were again issues with it, so Delhi high government issued that it should be implemented in two stages.

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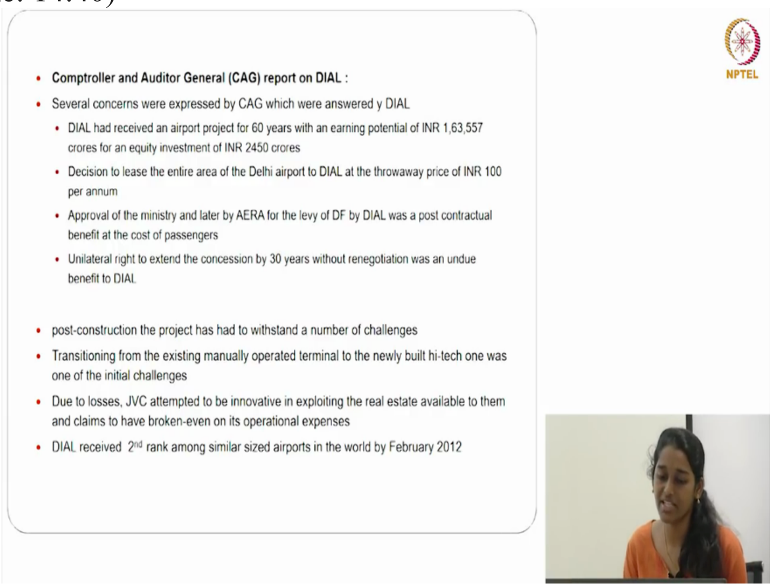

There were many criticism on them like there were many concerns regarding CAG on DIAL but DIAL answered almost all, they said that it received for like it received DIAL received airport for 60 years and with like the lease period in the lease entire area throwaway price at only hundred per annum and some concerns were raised by the CAG like despite all these the transition the in the airport itself there were many existing manually operated terminals were changed to newly high build which were not aware like they were not aware of how they were would be performed.

So, there initially they need some training to be done for those people. there were losses for the JVC in the initial years but then they exploited real estate and finally have claims to have broke even on its operational expenses. DIAL even received second rank among similar sized airports by 2012.

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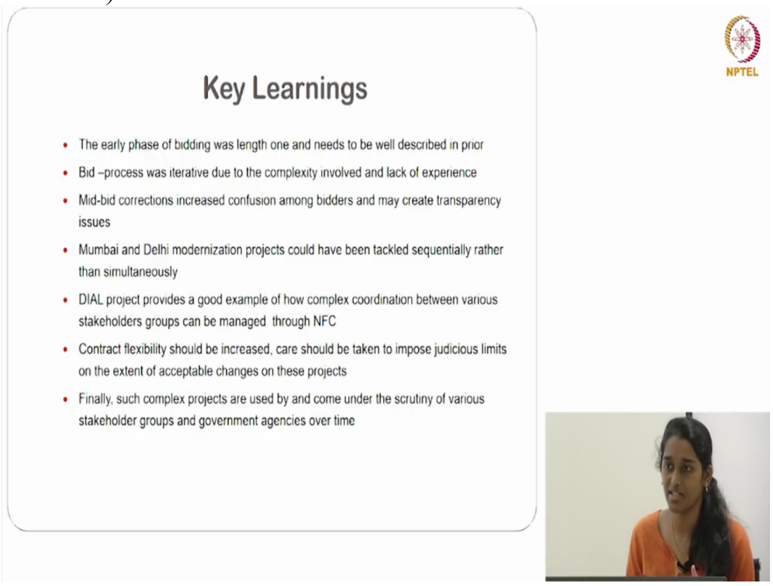

The key learnings include that early bid was like slant likely lengthy and it needs to be properly discussed well in prior and the bid process was iterative due to considering may be Mumbai and Delhi airports at a time maybe there could be done like not at a time but consecutively. And it even set a good example of by forming NFC we can see that how all the stakeholders could manage and how the project should like all the concerns regarding it and I think those are main key learnings.

Like the final project included, final complex project included like there will be many stakeholders and government agencies over time which are which need the scrutiny the complex projects.

Okay, thanks Yamini in Group 1 for a very detailed presentation of all the actions that happened. What I want to do is just I'm going to add on one more slide to your PowerPoint, okay. And so what I want to now talk about is we have this case like this lot of information.t is Let us first talk about the kinds of challenges that this case faced and then will talk about potential tools that we have talked about in class if we could use.

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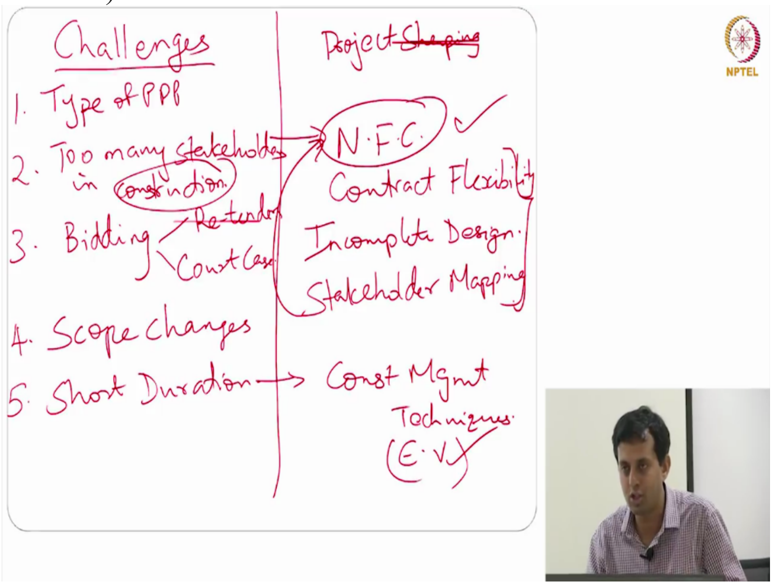

So, what are some of challenges that this project faced? So, type of PPP was itself a bit of a challenge, right? Wasn't easy to figure out what kind of PPP to undertake, they took a long time to figure out it should be joint-venture, it should be a lease, it should be a PPP and of course this was quite early on in the process, right? So that took a little bit of time, okay, great. What else? okay, but what is the issue that too many stakeholders created? There is too many stakeholders everywhere so but what was the, I mean the question is when you say too many stakeholders, where right? During the shaping phase, during tendering, construction what are you talking about?

Okay, yeah to many stakeholders in construction, okay and these are essentially a number of organisations that need to give permission you know the local municipality maybe the electricity department of course the contractors, the subcontractors possibly labour unions etc all of these sort of groups, okay. So, that was a big challenge that needed to be negotiated, okay.

What are the challenges? Okay, the bidding itself, right was a huge challenge. Okay, there were again two parts to this, one is they had to you know do these re-tenders, okay, which are always a bit you know irritating in the sense they said look so they have they have given out a set of criteria, they have put out a revaluation mechanism, bids have come in, they have evaluated and then there is a committee that comes up and says hey wait a second we need to re-evaluate it, let us take six of these parameters, there are two subjective let us make them objective, right.

So, it is almost as if you are turning things around after you have made a selection and indeed I think there was at least one candidate who in the original regime had been selected but when this new committee came in and reject the evaluations they fell off the radar, right. So, that the transparency in the bidding process is something that we need to think about. Also when selecting consultants also they had little bit of re tender.

Then they also had , so the one was re-tendering, the second one was of course the court case, right. As the end of the bidding process because the we decided and of course Yamini pointed out we were trying to modernise our aviation infrastructure it made a lot of sense to modernise Delhi and Bombay. Delhi is of course the capital of India you want to come in to the country to the capital you expect to see a nice big sort of modernised airport.

Bombay is the financial capital of the country. There are probably more people coming into Bombay than any other city, so again you want Bombay to actually make a good impression on people. So, Delhi and Bombay no-brainer, there are lots of flights etc. So, you decided to modernise the two but you have to decide to modernise the two simultaneously, right. And you ran a simultaneous bidding process for both, right. The problem with that was you were not sure if a single entity could do both at the same time.

So, you also put in a clause saying both of this cannot be performed by the same person, right. You don’t want to put all your eggs in one basket, okay. Which is again again Yamini was pointing out may be should have that staggered it, quite, do one first and then the other because in this case the worst fears came true, right. In the sense GMR led consortium were winning bidders in both cases, right. And therefore the second rule kicked in saying, look we can’t have the same person building Bombay and Delhi because we don’t know if you have the capability to build one airport let alone two and if something goes happen you go burst both airports right are at peril and therefore we need to have you know different stakeholders I mean different companies building both airports.

But because GMR had won both the polite thing to do was to go to GMR and say okay you can only take one of these which one would you like to take? Okay. And GMR looked at Delhi and the other advantage with Delhi was there were also land development rights associated with the project, so you have the airport, you also were able to develop land, developed airport I mean hotels etc. If you guys have been to Delhi airport and have even have gone out into the city you will see all kinds of you know large hotels all of that which is part of the PPPD.

So, GMR clearly found Delhi to be more lucrative so they said we will take Delhi. Right fine we will give out Bombay, right and Bombay therefore went to the GVK led consortium, right? But of course the person whose number two on Delhi is upset, see the person whose number two on Bombay is lucky right they now got bumped up to number one, okay. But the person who is number two in Delhi is now unlucky, right, had GMR chosen Bombay these guys would have been bumped up to number one in Delhi, right.

And who was number two in Delhi? That was reliance led consortium, right. So, this guys went to court and say this is ridiculous right I mean this is how can you randomly ask these guys to pick up one this thing why is GVK getting the benefit of the Bombay. So, lots of sort of questions you know are being raised and so the court looked it in and said look GMR won so therefore we will have to give it to them but the bidding parameters where obviously a combination of the technical sort of specifications, your technical qualifications and there was this component of revenue share, right, which was finally how I select people is the combination of the amount of revenue you will share with me as well as your technical competence etc. put together GMR score was above 80 on whatever scoring mechanism that they had, right.

And they promised I believe even if I recall correctly just to share under 40% as revenue share, which means of the revenues they will get 40% will go back to the airports authority, 60% they will keep and that is how they will make their money on the airport. So, the court said that is fine right but reliance has bid 45% which means reliance is saying for every hundred rupees they will give Rs. 45 to AAI so isn't that a better deal.

So, GMR you can keep the airport but you have to give us what the reliance was giving us right, because otherwise right why are we giving it to you for Rs.40 when reliance is giving me Rs.45, okay. And so GMR had no option they went in and said fine you will do it at 45, okay. So, that was the whole court case that sort of happen with regards to bidding as Yamini points out it could have been avoided if you had possibly staggered the development, just do one airport at a time so there is no dispute as to who's winning, right? As per your criteria this person is one, let them sort of take it.

Now the problem with doing it this way is that see GMR has done a detailed calculation and therefore they have arrived at a 40% revenue share, right. It is a competitive environment. They know that they are bidding against other people. So if they could have offered 45% what would they have done? If according to the calculations 45% was possible what would they have done? No, so in the initial bidding right if 45% were possible would GMR have bid 45% revenue share or not?

Okay, you are GMR okay your spreadsheet tells you that you can actually pay 45% to the government, would you say 45% or not? You would right because you are competing against others you want to give the sweetest deal possible, right. So, the reason they had saying 40% is probably because as per their calculations 40% is the best that they can afford to give, right. Remember it is a competitive scenario there is no point trying to be greedy, right, I can bid for 10% also I will never get the project, right? I need to bid at what is on the margin of possibility, right.

So, you have got a bidder who has bid 40% after careful thought. Now you force that bidder to do 45% revenue share. You are probably taking a risk on the financial sustainability of that bidder, right because they are no having to pay you five rupees more for every hundred rupees than they had planned and that five rupees is coming from the money they had allocated for repaying loans, paying dividends to shareholders etc. right.

So, there is already trouble brewing here, okay good. What are the other challenges in this case? Five rupees, no the five rupees would not have affected the project cost, five rupees is the revenue share, right, I have to pay you 5% more revenue share than I expected, if I don’t make any revenue it doesn’t matter whether I promised you 40% or 60% or 90%, right. It is just revenue share, okay.

So it doesn’t affect the cost, right, the cost of construction but Shri Lata yeah so scope changes, so you guys are saying so scope changes came in, okay. So, at some point there was a proposal for a new runway and an air traffic control tower. This is a normal construction contract, this is not a problem I want thousands crores more of work to be done, pay me thousand crores I will do it for you, right.

But this is a PPP, I have calculated, I have promised, I’ve calculated 30 years of revenue, right, I have work backwards to find a minimum profitability for me and I promised you 40, you have update to 45, okay. Now you want me to do thousand extra crores of construction, right. As it is I’m bleeding right because you have taken me from 40 to 45, right and you want me to do thousand extra crores of construction, okay. So which means there needs to be a alternative revenue stream available, right.

So, what do they do for an alternative, how do they come up with a scheme where the developer gets back the extra investment? So you will levy a fee that is the UDF or whatever, right the you know the user fee that you levy. So, you tell these guys look okay fine, right you spend another thousand crores, you want to get those thousand crores back or whatever number it is, right. Let us start Levying a fee on the users, right. So, let them pay a little bit extra to go through Delhi that money accrues to you and (())(26:29).

This then incurs the wrath of, okay who is now upset about this? Right, while reliance is now out of the picture right, although reliance also, I know reliance is not completely out of the picture because reliance now comes up and says because you have told me this was the possibility I would have bid different, right. But at the same time the airport a era the regulator for the airports as well as the CAG etc are sort of an saying what is this? Right I mean this is not fair in procurement right.

You are bringing these guys in at one price point telling them to do something and then you are just artificially increasing this. Now had you bid originally with two runways and an air traffic control tower and UDF how do you know that you might not have gotten somebody else with a much more competitive pay, right? So, the scope changes spiral into a number of discussions, right? How do I get the money back, okay levy some extra charges, if I levy extra charges others come in and say look what is how is this fair, right? How oft you finish the bid can you say there is a possibility of levying other charges, had I known that ahead of time I might have also bid differently, right?

So, there are some challenges here, okay. Any other challenges? Okay, short duration yeah so you needed to get it ready for the Commonwealth Games sot is that is a bit of a gun held across your head, right. So, I think we have covered the main challenges here. What are the strategies that you think could have been used or were used to combat these kinds of challenges. Yeah so here for the short duration they used, we haven't really talked about this much in this class but most of you have taken either my class on estimation construction management or probably the graduate construction planning and control class.

So, they did a good job of doing the construction planning well. So, earned value techniques and all of that were used , right? So, that helps there, okay. And this is for they had the national facilitation committee, right. So, essentially a committee conveying under the auspices of the Prime Minister meets with a viewpoint that any issues you resolve it then and there, right. So, I need to sort of a you know dig up something but electricity board is not giving me permission to dig up the electricity lines, resolve it right then and there. Right, figure out how what the plan is for diverting the electrical utilities, give permission, make sure that the work gets taking.

Because otherwise if you start writing letters here and there, there is no end to it. So, national facilitation committee was an important part,, right? So, these are the two strategies very clearly visible, okay. What else could have been done? Right. So, contract flexibility I think is key here, right? We have talked about this in class and we can see it again how there are uncertainties over time, right. Scope changes, right you know, your based on the way you bid the entire project finances change and so you need some way of having flexible contracts, you need some way of being able to anticipate these and say if there are scope changes ahead of time, right, you can even put it in the model sort of tender document, that if there are scope changes these are the ways in which scope changes will be addressed and therefore competing bidders can’t complain against it, CAG can’t complaint against it, right? Everyone is part of the same so everyone is well aware of that information.

So, certainly flexible contracts was key. So, well but the whole notion of contractual flexibility is relatively new, that is the whole point, right? Doesn’t matter it is not as if the west is way doing it and we’re not, right? People just refuse to put on flexibility to the contract because they are, they prefer having contracts that are bounded and you can very clearly say I have contracted this out I have nothing more to do with this. Okay, so the fact that they had foreign consultants which they did doesn’t seem to have solved this problem, contract was clearly not flexible, right? And flexibility would have greatly benefited the contract.

Even in terms of being able to say, look extend the contract duration, right? or whatever it is, whatever flexibility want to put in, right? Probably needed to have been there. Okay, what else? , Okay so maybe the designs could have been a bit more incomplete and this is actually a very interesting and relevant observation. See, what happens and I think we might have talked about this earlier , your gate sizes are in some ways controlled by the size of the aircraft, right? So depending on aircraft of a certain size you can have spacing between gates, right? If aircraft becomes larger than your gate spacing naturally has to become larger, right? Otherwise how will you park aircraft side-by-side.

An aircraft in a Boeing others are manufacturing dream liners this that etc. Aircraft sizes are becoming a bit larger, so the question is will the kinds of gates that you have and you build so many, right, be efficient as these sizes get larger and larger, right? And perhaps you need not built out all of these gates but could have built them later on so that maybe you have a set of gates for the older aircraft and as the newer aircraft come in you actually have much you know gates that are spaced much wider.

So, I think there is an element of incomplete design that could have come into this, right? I think the other thing that is so the two other things is one is the project shaping, the took a lot of time but a lot of it was because of the fact that they didn't know, right? So they went back and forth, okay. What they didn't probably do is sort of thing through enough the way the bidding process would work which is reflected in the fact that I have put in a large number of variables, 58 variables is quite a lot, right? I'm not sure how to evaluate them. A committee comes in.

So, you often need to do mock runs of how these complex bidding processes would work before you actually turned out to for public tender, right? So I think and that probably was not done because while they spent a lot of time figuring out which mode of PPP, once they figure that out they probably went a bit too fast to get to tender, right? But the other thing that I feel could have been added in was the whole stakeholder mapping element. What they have done is a really good job of mapping the stakeholders during construction, right? So they mapped out the stakeholders in construction, they identified who those people were and they have brought them to the table and they have created that committee, right?

So whether they used power interest made tricks or whatever you know we don't really know but they have done a good job mapping those. But they have left out a lot of the non-constructions stakeholders like the CAG, like ARA etc. who are now starting to create issues later on, right? So, I think in terms of you know doing this kinds of facilitation committees, right? One possibility is that they should have tried to filter in a strategy for some of these other stakeholders as well and therefore the project stakeholder mapping probably needed to be a bit broader.

Yeah, so that is the whole point of stakeholder. So these are obvious stakeholder, right? So we know that CAG, CVC you know all of these people are ARA is a very obvious stakeholder, right? So, I think this is the skill of stakeholder mapping and I think all of these stakeholders are you know it is not leap of faith to understand that this person is stakeholder the right then and there, right? So if you can apply your mind and say yes the electricity Department might not give me or the highways Department may not give me a planning permission and therefore I need to bring the main into a facilitation committee, right?

Why aren't you thinking the same way about the ARA or about the CAG saying at some point based on transparency these people are likely to audit my project and ask questions, right? So, I'm not saying bring them on because the whole point is CAG is(())(33:38) the way that is what maintains the neutrality. But do you have a strategy where what you are doing is far more transparent, so that they ask fewer questions, okay is that this thing. Okay, so these are essentially a list of you know challenges that this case faced and potential ways in which, some of some strategies were used NFC, earned value etc. were used.

But perhaps some of these kinds of strategies could have been used to make the Delhi airport story a lot better, like says in the case the developer seems to not be making very much out of the airport but seems to be making their money back out of the land transactions, right? But ideally the airport should be able to run by itself, right? And that is all has not been facilitating, okay. Good, so let us stop with the discussion on Delhi airport and go to the next case which is the Tirupur water supply and do a very similar analysis, let us present the case and then let us talk through what the challenges were and what have we talked about in this class that can actually help, okay. So good, Group 4 you guys are ready, come.