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Comparative Study on Mass Transit System & PPP Structure of Mumbai Pune Metro

Jayant R. Soni¹, Prof. Apeksha G. Choudhary²

Student M. Tech Transportation Engineering, Dept. of Civil Engineering, G.H.Raisoni University, Amravati, India

Assistant Professor, Dept. of Civil Engineering G.H.Raisoni University, Amravati, India

ABSTRACT: The Public Private Partnerships (PPP) has emerged as a very feasible fast and growing mode of creating infrastructure for our country. Our country is still starved of adequate infrastructure required for high level development; the opportunities for the growth of joint venture between both the sectors are huge and desirable. Government of India has been striving hard to mobilize investments for infrastructure in order to double its GDP from 3.986% to almost 9%. This implies that nearly \$450bn will be the requirement to develop Indian infrastructure in the next 5 year. The present study is an attempt to peek into the scope, future growth and risks that such partnerships may hold for our country.

I. INTRODUCTION

In India there is no exact date and year which could speak of the beginning of PPP but it is said that the PPP story began with private sterling investments in Indian railroads in the latter half of the 1800s. By 1875, about £95 million was put by British organizations in Indian "ensured" railroads. Then again we could follow it to the mid-1900s, when private makers and merchants developed in power sector in Kolkata (Calcutta Electric Supply Corporation) and in Mumbai with the Tata playing a prominent role in starting the "Tata Hydroelectric Power Supply Company" in 1911. PPP story started with private sterling interests in Indian railways in the last 50% of the 1800s. A new wave in PPP was felt when a policy was made by the Central government in 1991 and it was decided to allow private participation in the Power sector which opened up the doors for independent power producers. The National Highways Act, 1956 was altered in 1995 to empower private support. In 1994, through a focused offering process, licenses were conceded to eight cell cellular telephone utility administrators in four metro urban areas and 14 administrators in 18 state circles.

A. Public-Private Partnerships

A Public-Private Partnership (PPP) is a mutually beneficial collaboration between a public agency and a private sector entity. Through this contractual arrangement, the skills and assets of each sector are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.

Projects with the greatest likelihood of success are those high priority projects that are clearly defined and have a demonstrated public sector commitment. Projects delivered through a PPP must allocate the risks fairly between the parties, with each sector assuming the risks that they are best able to manage.

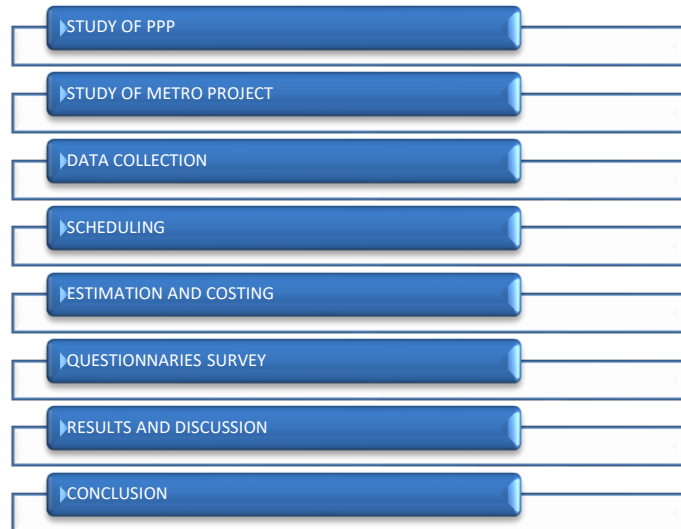
The public agency usually assumes the project definition risk by undertaking the environmental clearance effort, assessing financial feasibility and garnering stakeholder and political commitment. The private sector can best assume the financial risk, such as project financing, construction and perhaps facility management

B. Objectives

- To study the concept of Public-Private Partnership and its importance.
- To identify the impact of Public-Private Partnership on Indian Infrastructural projects.
- Conducting the Case Study of Pune metro.
- To compare scheduling of Public-Private Partnership of Mumbai metro with Pune metro.
- To discuss and Suggestion for the project.



II. METHODOLOGY



A. Problem Statement

Public Transport System is an efficient user of space and with reduced level of air and noise pollution. As the population of a city grows, share of public transport, whether road or rail-based, should increase. Experience has shown that, in cities like Pune where roads do not have adequate width and which cater to mixed traffic conditions comprising slow and fast moving vehicles, road transport can optimally carry 8,000 persons per hour per direction (phpdt). When traffic density increases beyond this level, average speed of vehicles comes down, journey time increases, air pollution goes up and commuters are put to increased level, of inconvenience. Thus when on a corridor, traffic density during peak hours crosses this figure, provision of rail-based mass transport, i.e. Metro system should be considered.

Following are the advantages to execute the metro in Pune:-

1. Parking system provided near Pune Metro station.
2. Multi-utility zone (MUZ) design principle
3. The proposed different elements on the road
4. Smooth vehicle moment.
5. Pedestrian moment.

III.RESULTS AND OBSERVATIONS

A. PPP Structure Of Pune Metro

Pune Metro is a mass rapid transport system (MRTS) under construction in Pune, Maharashtra, India. The metro network will have a total length of 54.5km when fully operational in 2022. Pune is an industrial city that has witnessed growth in the areas of corporate and industrial infrastructure over the last decade. The existing roads in the city currently carry 8,000 commuters an hour in each direction on an average. The city experiences high traffic during peak hours that leads to congestion and long hours of traffic jams along with increased pollution. The Pune Metro aims to provide a solution to the above issues by offering a safe and eco-friendly journey with a 50% reduction in travel time. The Pune Metro rail comprises three corridors. Construction of the first two phases is currently underway, while the third phase was approved for construction by the government of Maharashtra in October 2018.

Public Private Partnership (PPP) arrangements are steadily growing in use particularly in road, power, and telecom sectors which are more of commercial nature rather than in a social sector project. PPP models are arrayed across a spectrum ranging from BOT where the private sectors have total involvement to other tailor made models where both public and private sector assume separate responsibilities. A few alternatives which can be selected in this regard are



B. Public Private Partnership: Mumbai Metro

Mumbai Metro is a rapid transit system which is under construction in Mumbai. The system is designed to address both present and future needs of public transportation. The project was implemented under Built, Own, Operate and Transfer (BOOT) method and has been India's first PPP metro project in which all three phases (construction, operation and maintenance) were given to private players. The project involved an elevated 11 KM Light Rail Transit (LRT) system linking Andheri and Ghatkopar, via Asalpha, Marol, Chakala and Saki Naka. The construction of Mumbai Metro involved building up of a total of 146 KM of track, of which 32 KM is underground. The project was approved by the Government of Maharashtra in August 2004 and global bids were invited through an Expression of Interest (EoI). Almost 150 bidders responded to the EoI and a pre-bid meeting was held in November 2004 and final tender was given to Reliance Energy and Connex France. Veolia Transport and Hong Kong MRT were the other members of the consortium providing technical know-how. The construction of first phase of Mumbai Metro commenced on February 2008 and is expected to enter into operation in December 2013.

C. PPP Suitability

In order for Public-Private Partnerships in e-Governance to be successful, they must be firmly rooted within an overall policy framework of reform for the delivery of public services and the administration of government. On their own, PPPs can help improve the efficiency of a specific public service or governmental administrative procedure, but unless PPPs occur within the context of an overall policy framework that supports broader reforms, beyond just improved efficiency in one specific service or procedure, the goals and objectives of PPPs in E-Governance will remain limited. PPPs can realize these objectives best when they are part of an overall policy framework of reform in the delivery of public services and the management of governmental administrative procedures. Key elements of these policy frameworks should include:

- Government ministries that focus on policymaking and planning, but that delegate operational decision-making to Nodal Agencies, their Boards and their managers;
- Regulation & performance monitoring of these Nodal agencies and any private service Providers (PPPs) that is done by a Nodal Officer from the concerned Department/Ministry
- Ownership of the IT infrastructure by a Nodal Agency which is responsible for service delivery or contracting with private companies, through PPPs, for the delivery of these services;
- Operation of IT Infrastructure and the delivery of e-Governance services by private vendors through transparent, competitively-procured PPPs.

PPPs therefore, are one important part of a much broader framework to separate or un-bundle key roles of governance: planning & policy-making; regulation & performance monitoring; ownership of assets and contracting for their operations & management, and; the operation and management of those services and procedures. Without a dedicate effort to realize these broader policy objectives, PPPs can add processing capacity and delivery capacity, but they will likely be unable to contribute significantly to improving efficiency, productivity, performance, and quality throughout the sector.

IV. CONCLUSION

- PPPs if implemented successfully can be rightly called an epitome of operational efficiency, innovative technologies, managerial effectiveness and access to additional finances. Rather they help to combine and draw upon the best features of public and private sector to render services of international standards. However the picture is thornier than it appears. In spite of the success which the PPP model has met with in our country much is left to be desired.
- The existing urban transport system of Pune City which is road-based has already come under stress leading to longer travel time, increased air pollution and rise in number of road accidents. With projected increase in the population of the city strengthening and augmenting of transport infrastructure has assumed urgency. For this purpose provision of rail-based Metro system in the city has been considered.
- Studies have brought out that a Medium Capacity Metro with carrying capacity of about 25,000 phpdt will be adequate to meet not only the traffic needs for the present but for the future 30 to 40 years also. A medium capacity Metro System consisting of two Corridors namely (i) PCMC – Swargate Corridor (16.59 km) and Vanaz - Ramvadi Corridor (14.67 km) at an estimated completion cost of Rs. 11522.00crores (Central taxes & duties) to be made operational has accordingly been recommended.



RECOMMENDATIONS

- Issues pertaining to (i) Disaster Management, (ii) Security and (iii) Disabled Friendly Features have been discussed and measures to be implemented clearly brought out in this Project. Measures to be taken for accomplishing Multi Modal Traffic Integration have been addressed in details. Measures contemplated for directing the Land Use in tune with the proposed Metro alignments have also been spelt out in this Project.
- The fare structure has been estimated based on Delhi Metro fares decided by the fare fixation committee in 2009 duly escalating the same for year 2020. Subsequently, for the purpose of assessing returns form the project, the fares have been revised every second year with an escalation of 12% every two years.

REFERENCES

1. David Hall 'Public-Private Partnerships (Ppps)' October 2008
2. Knut Koschatzky 'Public-Private Research Partnerships' 2017
3. TharunShastry L 'A Study On Public-Private Partnerships With Reference To Indian Infrastructural Projects' Volume 3 Issue 10 | October. 2014
4. Dr. Vidyatelang, Dr. VishakhaKutumbale 'Public Private Partnerships In India (An Overview Of Current Scenario)' October 2014
5. Germánvelásquez 'Public-Private Partnerships In Global Health: Putting Business Before Health?' January 2014
6. Jomo Ks, AnisChowdhury, Krishnan Sharma, Daniel Platz1 'Public-Private Partnerships And The 2030 Agenda For Sustainable Development: Fit For Purpose?' February 2016
7. Ppp Cell 'Public-Private Partnerships Projects In India' December 2010.
8. Mckinsey& Company, Inc. 'Building India - Accelerating Infrastructure Projects' (August 2009).
9. KarunendraPratap Singh (2011), 'Issues And Prospects Of Public Private Partnership In India' Zenith International Journal Of Multidisciplinary Research Vol.1 Issue 5, September 2011, Issn 2231 5780.
10. Ficci (2012) 'Accelerating Public Private Partnerships In India'
11. AshwinMahalingam 'Ppp Experiences In Indian States: Bottlenecks, Enablers And Key Issues'
12. Mid-Term Appraisal, Eleventh Five Year Plan, Planning Commission, Government Of India (2007- 2012)
13. India Infrastructure Report (Adb) (December 2008), 'Criticality Of Legal Issues And Contracts For Public Private Partnerships' Government Of India, Ministry Of Finance, Department Of Economic Affairs, Position Papers And Workshop Reports.
14. Clive Harris (March 2008), 'India Leads Developing Nations In Private Sector Investment' Gridlines- Note No.30
15. Public Private Partnerships, India Database, Government Of India, Ministry Of Finance, Department Of Economic Affairs.
16. [Www.Pppindiadatabase.Com](http://www.Pppindiadatabase.Com)



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