

Public-Private Partnership (PPP) Role in Infrastructure Development in India in Transportation Sector

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Abstract—Public Private Partnerships (PPP) have emerged as one of the major approaches for delivering infrastructure projects effectively and efficiently. In recent years it has created various success stories whether it is infrastructure sector, agriculture, education or health care sector and the benefits of that is be enjoyed by the Indian economy. It is creating various employment opportunities as well as it helping in developing the economy. After Twelfth Five plan GoI has taken various initiatives in infrastructure development via PPP and up to a great extent it is successful in attaining that. The projects are undertaken at national level as well as state level. This paper will focus on how the various projects via PPP in transportation sector is helping in the development of world class infrastructure and the various projects ongoing and completed and it will also concentrate on the various issues and challenges faced by them.

1. INTRODUCTION

Physical infrastructure is a very important part for the development of an economy as it provides basic services that people need in their everyday life. Its contribution in economic growth is very much well recognized everywhere as it provides key economic services, develops the competitiveness, extends support to various productive sectors, generates high productivity and supports strong economic growth. To develop the world class infrastructure in India and to remove the infrastructure insufficiency in the country, the investment that is required to fill the gap cannot met by the public sector alone due to various constraints and other functions of the government. This investment needs call for participation of private sector in coordination with the public sector to develop the infrastructure facilities. In this direction various reforms initiated by the GoI, among those Public-Private Partnership (PPP) is one of them (Lakshmanan, 2008) [1]. During the Tenth and Eleventh Five Year Plans, significant investment has been made in infrastructure by way of private participation. PPPs are increasingly becoming the preferred mode for construction and operation of commercially viable infrastructure projects in various sectors such as highways, airports, ports, railways and urban transit systems. A huge corpus is set up for the various infrastructure

projects in India. GoI has set various authorities to check the compliance of the working of the PPPs in India. (Haldea, 2014) [2]. The model of PPP is very flexible and visible in variety of forms. The various models/ schemes and modalities to implement the PPP are set out in Table 1.

Table 1: Schemes and Modalities of PPP

Schemes	Modalities
Build-Own-Operate (BOO) Build-Develop-Operate (BDO) Design-Construct-Manage-Finance (DCMF)	The private sector designs, builds, owns, develops, operates and manages an asset with no obligation to transfer ownership to the government. These are variants of design-build-finance-operate (DBFO) schemes.
Buy-Build-Operate (BBO) Lease-Develop-Operate (LDO) Wrap-Around-Addition (WAA)	The private sector buys or leases an existing asset from the Government, renovates, modernizes, and/ or expands it, and then operates the asset, again with no obligation to transfer ownership back to the Government.
Build-Operate-Transfer (BOT) Build-Own-Operate-Transfer (BOOT) Build-Rent-Own-Transfer (BROT) Build-lease-operate-transfer (BLOT) Build-transfer-operate (BTO)	The private sector designs and builds an asset, operates it, and then transfers it to the Govt. when the operating contract ends, or at some other pre-specified time. The private partner may subsequently rent or lease the asset from the Govt.

Source: (Lakshmanan, 2008) [1]

2. RESEARCH METHODOLOGY

The aim of the research is to find how PPP model is helping in various infrastructure sectors and how government with the help of PPP is taking initiatives towards these sectors for inclusive growth. The study will focus on how PPP is helping in building the world-class transportation in the country in the area of development of airports, seaports, road and railway as

well as urban transit. The research will be based on Secondary data collected from various sources viz., Journals, books, Internet and from Government of India official websites and the material published by the authorized govt. departments. Current and updated data will be used to check the viability and success of the various projects via PPP through official websites of GoI.

3. PPP & INFRASTRUCTURE DEVELOPMENT IN TRANSPORTATION SECTOR IN INDIA

PPP is playing a very important role in India from last 5-10 years in developing the infrastructure development in India whether it is in developing airports, seaports, railways or urban transit. It has created various success stories in developing these sectors. This section will discuss how PPP is helping in the development of these sectors.

3.1. Role of PPP in Developing Airports

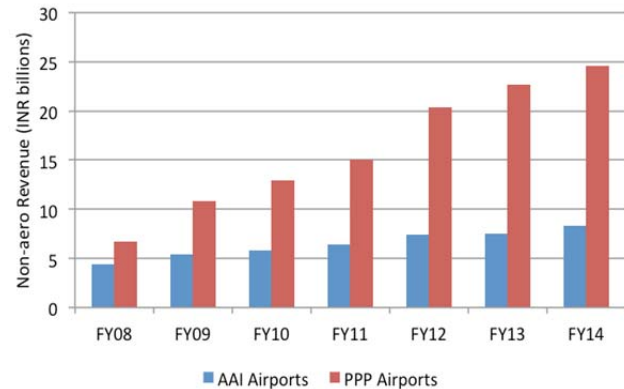
Airports act as the gateway for any country. It helps in raising trade and tourism. A country without national carriers can still trade with other countries but it does not attract fancy of tourists as for them an airport condition and attractiveness means a lot. In remote areas like in North- West regions in India airport is the only means through which the transportation can be done in shorter span of time. It also to be kept in mind that airports are to be connected with other means of transport like roads and railways so that seamless transportation can be done across the country. Traditionally airports were owned, managed and operated by governments but now the scenario has been changed and now there is worldwide trend of private sector involvement with varying degrees of private ownership and responsibilities, including the use of public-private partnership (PPP) models.

The Government of India has developed new airports or modernization of existing airports in several cities on a PPP basis:

- **Delhi, India:** Operation, Management and Development Agreement between the Government of India and Delhi International Airport, 2006 (brown field)
- **Mumbai, India:** Operation, Management and Development Agreement between the Government of India and Mumbai International Airport, 2006 (brown field).
- **Hyderabad draft concession agreement, India:** Concession Agreement for the Development, Construction, Operation and Maintenance of the Hyderabad International Airport between the Government of India and Hyderabad International Airport, 2004 (green field) (World Bank Group, 2015) [3]

Other major initiatives taken via PPP aimed at augmenting better airport infrastructure at four airports of the AAI - Chennai, Kolkata, Ahmedabad, and Jaipur. It is estimated that AAI has earned USD 1.7 billion in revenue share from PPP

airports since FY2007. Without this income and its air navigation services division the AAI's business model is unviable. (Centre for Aviation (CAPA), 2016) [4]. The revenue earned by AAI airports as compared to PPP airports is shown in Fig. 1 below:



Source: (CAPA – Centre for Aviation, AAI) [4]

Fig. 1

This Fig. clearly shows how PPP model is helping in generating revenue to the government and not only this it is creating various employment opportunities as well.

3.2. PPP role in Railways

The Railways in India is considered the essence of the nation that gives life to the whole country and, hence, the responsibility of booming the economy lies on the shoulder of the railways. The progression in the economy has resulted because of the improvement and enhancement of rail infrastructure in the country. As part of the overall strategy of restructuring the railway infrastructure, a major thrust has been given to PPP. (Kumar, 2007) [5]

Indian Railways network spans more than 65,808 kms, making it the world's third largest rail network. Increasing urbanization coupled with rising incomes (both urban and rural) is driving growth in the passenger segment. Growing industrialization across the country has increased freight traffic over the last decade. The sector's total track length is 1,16,765 km. It also comprises 66,392 coaches, more than 240,000 wagons and 1.3 Million employees. (Make In India, 2016) [12]

In recent rail budget Public Private Partnerships (PPP) initiatives has been taken such as rail connectivity for ports, station-redevelopment, rail-side logistics parks and warehousing as well as satellite terminals. Indian railways have undertaken more than 20 projects worth Rs 14,000 crore during the 12th Five year Plan, including those for laying new lines, doubling the existing ones, enhancing port connectivity and electrifying its network under PPP model. Indian Railway has proposed Rs 8.56 lakh crore investment plans for the next five years and the national transporter expects to execute a sizable chunk of projects through Public-Private Partnership and in collaboration with states. In order to attract private

investment, railways have strengthened the PPP framework besides launching investor-friendly build, operate and transfer (BOT) annuity model to construct new tracks. During 2002 and 2014, eight port connectivity projects worth about Rs 3153 crore were implemented. These covered the linking of Mundra Port and Pipavav-Surendranagar, Hassan- Mangalore, Gandhidham-Palanpur and Bharauch-Dahej gauge conversion projects. For FY14, the Rail budget proposes to mobilize USD1.1 billion through the PPP route. (PTI, 2015) [6]

3.3. PPP Role in Sea Ports

Ports in India play a vital role in the overall economic development of the country. About 95 per cent by volume and 70 per cent by value of the country's international trade is carried on through maritime transport. Development of Port infrastructure is a subject of both the Central and State Governments. While major ports are under the Centre's Ministry of Shipping (MoS), non major ports are under the respective State Governments. Maritime transport is a critical infrastructure for the social and economic development of a country. Ministry of Shipping is entrusted with the responsibility of formulating policies and programs for the shipping and ports sector. India has a coastline of 7,517 km served by 13 major ports and about 200 notified non-major ports along the coastline and sea-islands. In 1996, the port sector was opened for private sector participation, following which, the government decided to move towards the Landlord Port concept, where new ports were expected to be established as companies under the Companies Act 1956 and existing port trusts were expected to be corporatized; the plan has not been implemented, with the exception of Kamaraja Port Limited. During the year 2013-14, sixteen (16) PPP projects were awarded at an estimated cost of Rs. 18,640.8 crore for capacity addition of 159 MT in the Major Ports comprising construction of berths and terminals, mechanization of existing berths, etc. In addition to the development of ports and terminals, the private sector has extensively participated in port logistics services. (Ministry of Finance, 2016) [7].

During the last four years, the government cleared 88 new projects with an investment of around Rs. 42,953 crore, leading to additional capacity of 558 million. Work on many of these projects is underway. Today, some 36 PPP terminals are in operation in major ports and another 34 are under construction. This shows that how PPP is helping in development in ports in all regions of the country and it is also helping in increasing the trade volume of the country.

3.4. PPP role in Infrastructure of Roads

India has the second largest road network across the world at 4.7 million km. This road network transports more than 60 per cent of all goods in the country and 85 per cent of India's total passenger traffic. Road transportation has gradually increased over the years with the improvement in connectivity between cities, towns and villages in the country. In recent years Indian economy has been showing signs of overheating because of basic infrastructure constraints, both physical and human.

Clearly, there is a wide gap, in this context, Government is taking actions for huge investment in infrastructure along with private investors. The road network of India consists of National Highways (NH), State Highways (SH), Other Public Works Departments (OPWD) Roads, Rural Roads, Urban Roads and Project Roads. Together, road sector contribute 4.7% to India's GDP. The Ministry of Road Transport and Highways (MoRTH) is responsible for the formulation of policies relating to regulation of road transport in the country, besides making/monitoring arrangements for vehicular traffic to and from the neighbouring countries. (Ministry of Finance, 2016) [7]. The heat of starting PPP in roads developments was started in 1990's. With a greater understanding of concepts such as value for money and risk-sharing frameworks, the Government of India as well as State Governments are challenging themselves by trying new PPP models. In various states PPP model has been adopted for the development of the roads like The National Highways Authority of India (NHAI) has awarded some operations, maintenance and transfer (OMT) contracts. The State of Madhya Pradesh has awarded PPP projects combining revenue streams of BOT (toll) and BOT (annuity) for developers, while states such as Karnataka are experimenting with hybrid models combining viability gap funding (VGF) with annuity payments, using co-financing from the World Bank and the Asian Development Bank. A similar model has also been tried by the Ministry of Road Transport & Highways (MoRTH). Some states, including Andhra Pradesh and Karnataka, have experimented with performance-based extended maintenance contracts. Various projects are launched and some are under consideration under PPP model. Till March 2014, India has completed 100 PPP projects and 165 are ongoing. The common type of PPP models used in road projects are Build Operate Transfer (BOT) toll and BOT annuity. As of March 2015, projects worth Rs. 1,97,045 crore have been awarded through the PPP mode. During the next five years, investment through PPPs are expected to be in the region of USD31 billion for NHs. (Project Finance International, 2016) [8]

3.5. PPP role in Urban transit

Public-private partnership mechanisms are not new to India and have been used in various urban infrastructure projects. According to estimates the Urban Infrastructure and Services required the total capital investment and operations expenditure for the delivery of urban infrastructure services over the next 20 years is Rs. 39.2 lakh crore. It is obvious that this much high amounts of financing will require considerable mobilization of private sector resources and their effective utilization for public infrastructure creation and service delivery. Various projects has been launched and created success stories as well in urban transportation system. As we know that as cities are growing grow and traffic congestion is increasing, government is looking increasingly for alternatives to encourage a shift from private to public transport. Light rail, tram and metro transit systems as well as bus rapid transit (BRT) projects are alternatives to carbon intense urban

individual transport. India has approximately 3000 small cities / towns of which about 300- 400 need some form of organized public transport whether by bus or by railways transportation system. We are seeing that there is an increasing trend of involving the private sector in provision of these services, ranging from outsourcing of specific services to full transit role. Initially the development of metros are in the hands of purely govt. sector only like DMRC, Kolkata, Chennai and Bangalore metros but now these days same has been developed with the model of PPP like Mumbai Metro, Delhi airport line and Hyderabad metro. Along with rail transit bus transit is also gaining importance like BRT systems in Ahmedabad, Indore, Bhopal, Inter and Intra city bus systems in Ujjain, NCR, Surat, Vadodara etc. (Patel, 2014) [9]

4. CHALLENGES FACED IN PPP MODEL

Undoubtedly PPP is gaining importance in India but there is other side picture as well which tells about the challenges face by them. Before any approval of PPP projects various economic, social, political, legal, and administrative aspects need to be carefully assessed. One of the best examples of the failure of PPP is the pullout of the Reliance from Airport express Line and after that DMRC has taken the full charge. The country has now entered an inflexion point in PPP where it is moving from asset creation to operation of projects. The shift is leading to problems in the absence of an institutional mechanism, like those present in other countries, to deal with renegotiations. There is suddenly a spate of PPP projects, which have come up for renegotiation. GMR and GVK have walked out of recently won mega-highway projects; the Gurgaon Expressway is in trouble and Delhi Airport has been shouting for resets. The reasons for the failure of PPP projects in India are many, ranging from poor preparations, flawed risk-sharing, inappropriate business models and fiscal uncertainties to vested interests leading to development of skewed qualification criteria. (Singh, 2013) [11]

5. THE WAY AHEAD

PPP is gaining lot of importance in India and it has created various success stories by completing various projects on time and with less costs but still these are overlooked as the media focuses on some pain points that are inevitable in projects involving land acquisition, construction, environmental clearances and other contentious issues. It's time to put these issues behind and focus on rejuvenating the infrastructure sector in India. This is imperative, given the ambitious infrastructure plans such as Housing for All, 100 Smart Cities and stiff goals in increasing the capacity of power projects in conventional as well as renewable energy. Most experts believe better preparation before the process of bidding for a PPP project is the key. Each sector should prepare long-term investment and financing plans to identify revenue sources as well as the extent of financing that can be enabled. This will highlight any gap between capacity increase needed and capacity increase that can be afforded, through visible

financing sources. Bridging the gap would require additional revenue sources or capital subsidy. Therefore, the delivery plan should articulate the value expected to be delivered by PPP and lead to a concession structure (or risk-sharing) that is aligned to the expected role of the PPP (or areas of efficiency). Undoubtedly, while there are some gaps in the PPP model, these can be resolved. The Centre has already tasked the Kelkar Committee to review the policy in order to revitalise infrastructure development. The committee will analyse the risks involved for PPPs in different sectors and the existing framework for such risk-sharing, suggest an optimal risk-sharing mechanism between private investors and the government, and also suggest steps to improve capacity building in government to effectively implement projects. These things will definitely kick start the PPP model and it will help in developing the economy. (AGARWAL, 2015) [10]

REFERENCES

- [1] Lakshmanan, L. (2008). Public-Private Partnership in Indian Infrastructure Development: Issues and Options . *Reserve Bank of India Occasional Papers* , 29.
- [2] Haldea, G. (2014). *Compendium of PPP projects in Infrastructure*. Planning Commission, PPP & Infrastructure Division . New Delhi: PPP & Infrastructure Division Planning Commission, Government of India Yojana Bhawan, Parliament Street .
- [3] World Bank Group. (2015, July 5). *Public Private Partnership in Infrastructure Resource Center (PPPIRC)*. Retrieved 2016, from Public Private Partnership in Infrastructure Resource Center (PPPIRC): <http://ppp.worldbank.org/public-private-partnership/sector/transportation/airports>
- [4] Centre for Aviation (CAPA). (2016). *Centre for Aviation (CAPA)*. Retrieved April 2016, from India airports Public Private Partnership model is transformational but key lessons to be learned: <http://centreforaviation.com/analysis/india-airports-public-private-partnership-model-is-transformational-but-key-lessons-to-be-learned-176264>
- [5] Kumar, K. (2007). Public-Private Partnership in Indian Railways. *Summer Research Internship Programme* .
- [6] Make In India. (2016). *Make In India*. Retrieved 2016, from Make in India: <http://www.makeinindia.com/sector/railways>
- [7] PTI. (2015, Dec). *Indian Railways undertake PPP projects worth Rs 14,000 crore*. Retrieved 2016, from The Financial Express:<http://www.financialexpress.com/article/economy/india-n-railways-undertake-ppp-projects-worth-rs-14000-crore-check-www-irctc-co-in/175243/>
- [8] Ministry of Finance. (2016). *Public Private Partnerships in India*. Retrieved 2016, from ppp in India: <http://www.pppinindia.com/database.php>
- [9] Project Finance International. (2016). *Emerging trends in road PPPs*. Retrieved 2016, from Project Finance International: <http://www.pfie.com/emerging-trends-in-road-ppps/21019269.fullarticle>
- [10] Patel, H. M. (2014). *PPP ARRANGEMENTS IN URBAN TRANSPORT*. 2nd Asia BRT Conference, Ahmedabad, Ahmedabad.

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- [11] AGARWAL, M. (2015, Oct). *How to revive the PPP model in India*. Retrieved 2016, from Business Line: <http://www.thehindubusinessline.com/opinion/how-to-revive-the-ppp-model-in-india/article7797268.ece>
- [12] Singh, S. P. (2013). *What is wrong with PPP in India?* Retrieved 2016, from Business Standard: http://www.business-standard.com/article/economy-policy/what-is-wrong-with-ppp-in-india-113070600510_1.html
- [13] Make In India. (2016). *Make In India*. Retrieved 2016, from Make in India: <http://www.makeinindia.com/sector/railways>