

Effective Public – Private Partnership for Infrastructure Development: An Indian Experience

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Abstract

The shortage of infrastructure is proving to be a key binding constraint in sustaining and expanding economic growth. Infrastructure spending is the only way to bridge this gap to boost the economic growth. Traditionally, in India, infrastructure related services are mostly considered under government periphery. But, due to certain shortcomings this model has not come at par with the growing needs of the economy. Hence, the concept of Private Public Partnership (PPP) confirms the realization of the need for cooperation between the public and private sectors to ensure a sustainable economic development. PPPs aim is to combine the skills, expertise, and experience of both the public and private sectors to deliver higher standard of services to the nation. The PPP model in India has achieved an intermediary success in certain specific sectors like real estate, construction, roads etc. Infrastructure development is the key aspect for sustaining and expanding India's economic growth. In the light of the above background, this paper is to give a conceptual frame work to sustainable PPP model adopted in India and its application to infrastructure development. The paper also examines the relevance of PPP model for accelerated economic development in India.

Key words: *Economic growth, Infrastructure, Optimum Risk, PPP Model, Soft Fund, Special Purpose Vehicle.*

JEL Codes: *H400, L32, L980, O16, O18*

Introduction

PPPs have been around for a few centuries. During sixteenth and seventeenth century, in France roads and bridges were concessioned for tolls in return for maintaining the routes. Canals were built and water was collected and distributed under concessions. By the 1820, there were six private water companies operating in London. Such works included: riverbeds and canal construction, waste collection, public lighting, mail distribution, and even opera houses. At the beginning of the nineteenth century, nearly all of the waterworks in the USA were private.

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Electricity utilities in the nineteenth century in Brazil, Chile, Costa Rica, and Mexico were private entities. In Argentina, Brazil, and Uruguay, private developers from Britain, France, and the United States built and operated many of the early railways in the nineteenth and twentieth centuries. PPP was pioneered in the United Kingdom and later on spread to other parts of the globe such as the Middle East, Australia, Canada and Europe. Singapore too has taken up the PPP model in recent years. This has given fresh hope to the idea that PPP can indeed be tapped to provide for meeting the ever increasing demand in Asia and elsewhere.

The model of PPP in sector of infrastructure was prevalent in India as early as the 19th century. The Great Indian Peninsular Railway Company operating between Bombay and Thana (1853), the Bombay Tramway Company running tramway services in Bombay (1874), and the power generation and distribution companies in Bombay and Calcutta in the early 20th century are some of the earliest examples of PPP in India.

In the past, the infrastructure sector has been the forte of the government and state agencies alone in India. However, today, it has emerged as an attractive sector for investment by the private players due to the higher returns it promises in spite of the long-term commitment required and the bureaucratic and political risks involved. This has led to the emergence of the popular model of PPP, in financing of infrastructure projects. PPP is a well thought theme and is in line with the global trend of liberalized economy. The theme further confirms the realization of the need for cooperation between the public and private sectors to ensure a sustainable economic development in the country. In the 1990s a specific form of privatization was developed to deal with limitations on public borrowing. This involved using a private company to borrow money, build a new hospital, school, road, etc and then operates it over many years, recouping the investment and profit from payments over the whole period of operation.

Purpose of the Study

The aim of this paper is to provide a conceptual background to PPP and its application to infrastructure development with special reference to India. Therefore, the objectives of this paper are to:

- i. Explain the concept of PPP
- ii. Understand various models of PPP
- iii. Discuss various options of PPP for infrastructure development.
- iv. Examine the relevance of PPP for accelerated economic development
- v. Describe the Indian experience in PPP

Conceptual Framework

As per government of India's definition, "PPP means an arrangement between a government or statutory entity or government owned entity on one side and a private sector entity on the other, for the provision of public assets and/or related services for public benefit, through investments being made by and/or management undertaken by the private sector entity for a specified time period, where there is a substantial risk sharing with the private sector and the private sector receives performance linked payments that conform (or are benchmarked) to specified, pre-determined and measurable performance standards." 'Private Sector Company' means a company in which 51 percent or more of the subscribed and paid up equity is owned and controlled by a private entity. 'Public Services' are those services that the State is obligated to

provide to its citizens (towards meeting the socio-economic objectives) or where the State has traditionally provided the services to its citizens. For example, provision of security, law and order, electricity, water, etc. to the citizens.

In total, PPP is a long-term contractual partnership between the public and private sector agencies, specifically targeted towards financing, designing, implementing, and operating infrastructure facilities and services that were traditionally provided by the public sector. These collaborative ventures are built around the expertise and capacity of the project partners and are based on a contractual agreement, which ensures appropriate and mutually agreed allocation of resources, risks, and returns.

Need for Development of Infrastructure Services

India has been facing large gaps in the demand and supply of essential social and economic infrastructure and services. Rapidly growing economy, increased industrial activity, burgeoning population pressure, and all-round economic and social development have led to greater demand for better quality and coverage of water and sanitation services, sewerage and drainage systems, solid-waste management, roads and seaports, and power supply. Increased demand has put the existing infrastructure under tremendous pressure and far outstripped its supply.

The infrastructure shortages are proving to be the leading binding constraint in sustaining, deepening, and expanding economic growth and competitiveness of India. For example, the lack of good quality infrastructure is costing India around 2 per cent growth in GDP every year. Good quality infrastructure has been the main enabler of higher level of economic growth in developed as well as developing countries like USA, Russia, Malaysia, and China. The Expert Group on Commercialization of Infrastructure estimated the loss due to poor roads and congestion at around Rs 200 billion per annum. The Economic Survey of India, 2006-07, estimates that power shortages of 12 per cent at peak levels and 8 per cent at non peak levels are equivalent to around \$3.4 billion of forgone generation capacity or an approximate GDP loss of around \$68 billion. The annual cost of environmental degradation, on account of lack of sewerage and solid-waste management systems and surface water harvesting is 4.5 per cent of GDP. Water pollution accounts for 6 per cent of the economic cost of environmental degradation which undermines global competitiveness. Lack of infrastructure is preventing the sectoral, regional, and socioeconomic broadening of the economy. Poor infrastructure is also a major barrier to foreign direct investment. Greater investment in infrastructure is the answer to all these problems. In this backdrop, Government of India is committed to raising investment in infrastructure from its existing level of below 5 percent of GDP to almost 9 percent. This suggests that more than 450 billion US dollar will be required to fund infrastructural development in India over the next five years.

Traditional Model of Infrastructure Development

Infrastructure services traditionally have been the domain of government run institutions in India. Traditionally it has been pursued that infrastructure is only the government's concern and government is solely responsible for its development. The role of government is to provide necessary infrastructure services towards the growth and development of country. Hence, for a long time in emerging economies, the traditional government driven model existed. The government revenue in terms of direct & indirect taxes are major sources of funding apart from

government services and other governments department. Funds are allocated annually depending upon the requirement and they may not be related to income generated or revenue collected. The various government agencies & statutory bodies are deployed to various infrastructure ventures. In spite of strong government initiative, there are still certain shortcomings in Traditional Model as highlighted below:

- The government has limited funds available from their annual incomes plus there are restrictions on the levels of borrowing for public spending.
- Lack of specialized skills needed for technologically advanced activities.
- Increased government debt.
- Execution is timely delivery of project is a key challenge with inherent red-tapism in the system.
- Complex legal compliance & statutory issues result in unnecessary delay.
- The estimation and project management is poor due to lack of expertise.
- Tendency for under investment backed by political influence.
- Quality, efficiency & competitiveness are very low.

Public-private partnerships are an important part of the answer to such shortcomings.

Privatization and PPP

While PPPs may seem same as privatization but they are different from privatization. PPPs involve private management of public service through a long-term contract between an operator and a public authority whereas privatization involves outright sale of a public service or facility to the private sector. A typical PPP example would be a toll expressway project financed and constructed by a private developer. PPPs enable the delivery of infrastructure and ancillary services without privatization. PPPs differ from privatization in that:

- Public owned assets are not sold off to the private sector
- In many cases new assets which are initial funded by the private sector are eventually transferred to public ownership
- Core services continue to be provided by the public sector
- The Government, on behalf of the public, sets standards of ancillary service delivery
- Profit sharing arrangements are in place the community may have access to any wind falls which could be generated under PPPs.

The following are the few examples of Asian countries with the type of PPP used in the infrastructure sector.

- Development of road links on BOT and BOO basis (Bangladesh)
- Railway ticket booking systems (Bangladesh)
- Fiber optic systems operated by the Private sector (Bangladesh)
- Private sector development and investment in ports (India)
- Private airport development and operation (India)
- Optic fiber telecom distribution systems (India)
- Private sector lease/usage of rail wagons (India)
- Ropeway systems (Nepal)
- Private sector operation of Inland container depots (Nepal)
- Transport and tourism investment and operation by the private sector in (Bhutan)

Roles and Responsibilities

PPPs do not mean reduced responsibility and accountability of the government. They still remain public infrastructure projects committed to meeting the critical service needs of citizens.

- The government remains accountable for service quality, price certainty, and cost-effectiveness of the partnership.
- Government remains actively involved throughout the project's life cycle.
- The government's role gets redefined as one of facilitator and enabler.
- The private partner plays the role of financier, builder, and operator of the service or facility.

Forms of PPP

There are two main forms of PPPs. Firstly, concession contracts, where the company gets paid by user charges – for example in water services, or toll roads. Secondly, contracts typical of the private finance initiative (PFI) in the UK, where the company gets payments from a public authority. There is also a third meaning of PPP, which the European Commission has called an 'institutional PPP'. This is a joint venture company, providing a public service, which is partly owned by a public authority and partly owned by a private company or private investors. There are various models of PPP. The first includes those that are applicable to new projects, while the other includes options applicable to existing non-performing or moribund projects. The types of public private partnership models with varying degrees of private participation are as follows:

Applicable to New Projects

The following options can be used to initiate new desirable projects to kick start the economy in the absence of sufficient financial, technical and managerial resources to the government. Among popular options in this category are described below.

- **Design-Build (DB)**
Under this model, the government contracts with a private partner to design and build a facility in accordance with the requirements set by the government. After completing the facility, the government assumes responsibility for operating and maintaining the facility. This method of procurement is also referred to as Build-Transfer (BT).
- **Design-Build-Maintain (DBM)**
This model is similar to Design-Build except that the private sector also maintains the facility. The public sector retains responsibility for operations.
- **Design-Build-Operate (DBO)**
Under this model, the private sector designs and builds a facility. Once the facility is completed, the title for the new facility is transferred to the public sector, while the private sector operates the facility for a specified period. This procurement model is also referred to as Build-Transfer- Operate (BTO).
- **Design-Build-Operate-Maintain (DBOM)**
This model combines the responsibilities of design-build procurements with the operations and maintenance of a facility for a specified period by a private sector partner. At the end of that period, the operation of the facility is transferred back to the public sector. This method of procurement is also referred to as Build-Operate-Transfer (BOT).

- **Build-Own-Operate-Transfer (BOOT)**

The government grants a franchise to a private partner to finance, design, build and operate a facility for a specific period of time. Ownership of the facility is transferred back to the public sector at the end of that period.

- **Build-Own-Operate (BOO)**

The government grants the right to finance, design, build, operate and maintain a project to a private entity, which retains ownership of the project. The private entity is not required to transfer the facility back to the government.

- **Design-Build-Finance-Operate/Maintain (DBFO, DBFM or DBFO/M)**

Under this model, the private sector designs, builds, finances, operates and/or maintains a new facility under a long-term lease. At the end of the lease term, the facility is transferred to the public sector. In some countries, DBFO/M covers both BOO and BOOT.

Applicable to Existing Projects/Facilities

PPP can also be employed in the resuscitating and rehabilitation of an existing project or facility that is not performing optimally. The available variants include the following:

- **Service Contract**

In this option, the public sector retains control over its services and facilities while the private sectors participate through a service contract. In service contract or “contracting out” the government contracts with private sector to supply functional responsibilities that government previously performed. The introduction of private sector operator will lead to competition, reduction in service delivery cost, improved quality of service and improved morale of public employees and managers.

- **Management contract /lease management contract**

This entails the introduction of private sector operator to a publicly owned facility under contract with the sponsoring government. The private operator is responsible for all aspects of operation and maintenance. This can lead to improved service and efficiency in service delivery. This can be used to enhance performance of public sector owned hotels, water supply system, etc.

- **Concession**

Concession entails that government grants to a private firm or consortium the exclusive rights to operate, maintain and manage the entire project facility for an extended period. The basic system is still owned by the public, but the private concessionaire owns all improvements and extensions. The concessionaire/ inject capital as part of the concession agreement to revitalize the facility. The details of the operating requirement and the responsibility of owner government are usually spelt out in the concession agreement. Usually the concessionaire sets the rates for the services, but usually within the regulatory requirements of the government. Also, the concessionaire is often required to pay an initial and or annual concession fee to the government, and to commit to certain level of investment over the course of the concession period. This is applicable to hotels, water system, medical facilities, roads, airport facilities, etc.

- **Divestiture**

The government transfers an asset, either in part or in full, to the private sector. Generally the government will include certain conditions with the sale of the asset to ensure that improvements are made and citizens continue to be served.

The choice of an option in a given situation depends upon various factors such as: the degree of control desired by the Government; ability of the Government and private sector to provide the desired service at specified and acceptable level of quality; legal framework for private investment; regulatory mechanism; and potential of attracting financial resources from both the public and private sectors.

Business Models of PPP

The above mentioned models of PPPs may be operational in any one of the following forms:

a. Joint ventures

The private and public sectors set up a jointly owned company to complete a project which brings benefits to both parties.

b. Franchises

The private sector is permitted to provide and charge the public for services which would normally be provided by the state, in return for a fee.

c. Privately financed investment projects

A private company obtains the funds to design, construct / refurbish and operate/maintain a public asset such as a hospital. Once the asset is operating a regular fee is paid by the public sector for a set period (usually 20-35 years). At the end of this period, the asset reverts to public ownership.

d. Retaining minority shares in privatized companies

The state retains an agreed percentage of the shares, in order to keep some control over the provision of services to the public.

e. Market Testing

Private companies are invited to tender for a contract to provide public services, in competition with the existing public sector provider.

Stakeholders Concerns in PPPs

It is clear that developing an infrastructure project in general through Private Sector Participation is an involved and complex exercise as it calls for meeting the objectives of all the stakeholders of the project. The various concerns of the key stakeholders in a typical project are as follows:

i. Government

- Ensuring that the project comes up in time
- Ensuring that the resources provided by it are suitably leveraged
- Ensuring that the service delivered is of a high quality.
- Ensuring that the consumers obtain the value for money and the prices assure the equity investor a decent return on his investment.

ii. Consumer

- Continued delivery of the service
- High Quality service
- Availability of service at reasonable price

iii. Equity providers/Shareholders

- Steady use by the consumers of the service facility
- Earning a reasonable rate of return on their investments
- Earning the upsides from the success of the project (High Risk- High Return)
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iv. Lenders

- Completion of the project within the specified time period and within the estimated costs.
- Revenues and expenses in line with the estimates
- Reduction of downsides of the project.

Structure of PPP

There are three key questions need to be answered in structuring PPP are:

- how do we fund such a large requirement of financial resources?
- how do we ensure that these resources translate into infrastructure assets in an efficient manner?
- how do we ensure that, once created, these infrastructure assets translate into high quality services that benefit the economy, communities and ordinary citizens in an inclusive and transparent manner?

Typically, a PPP project involves a public sector agency and a private sector consortium which comprises contractors, maintenance companies, private investors, and consulting firms. Under the PPP format, the government role gets redefined as one of facilitator and enabler, while the private partner plays the role of financier, builder, and operator of the service or facility. PPPs aim is to combine the skills, expertise, and experience of both the public and private sectors to deliver higher standard of services to customers or citizens. The public sector contributes assurance in terms of stable governance, citizens' support, financing and also assumes social, environmental, and political risks. The private sector brings along operational efficiencies, innovative technologies and managerial effectiveness, access to additional finances, and construction and commercial risk sharing. The consortium often forms a special company or a 'special purpose vehicle' (SPV). The SPV signs a contract with the government and with the subcontractors to build the facility and then maintain it. To enable the flow of private funds and resources into public infrastructure and services, the PPP is operationalized through a contractual relationship between a public body and a private company. This partnership could take many contractual forms, which progressively vary with increasing risk, responsibility, and financing for the private sector. However, the most common partnership options are (i) Service Contract; (ii) Management Contract/Lease; (iii) Build Operate Transfer (BOT); (iv) Concession; (v) Joint Venture; and (vi) Community-based Provision. Most contracts take the form of Concession and Design, Build, Finance, and Operate contracts, to cover the finance, design, management, and maintenance obligations. These contracts are usually financed by user fees or tariffs or by government subsidies. The public sponsor of the PPP decides the degree of private participation required for the particular project. This decision is usually based on the government's objectives of undertaking the project, the degree of control it desires, and the ability of the PPP consortium to deliver the required service. It is also influenced by the provisions of the existing legal and regulatory framework, the structuring of the project to attract private resources, and the potential to generate future cash flows.

Financing Structure

PPP projects are often undertaken to supplement conventional procurement practices by taking additional revenue sources and mixing a variety of funding sources, thereby reducing demands on constrained public budgets. Some of the revenue sources used to support PPPs includes:

- Shareholder equity
- Grant anticipation bonds
- General obligation bonds
- State infrastructure bank loans
- Direct user charges (tolls and transit fares) leveraged to obtain bonds;
- Other public agency dedicated revenue streams made available to a private franchisee or concessionaire:
 - Leases
 - Direct user charges from other tolled facilities
 - Shadow tolls

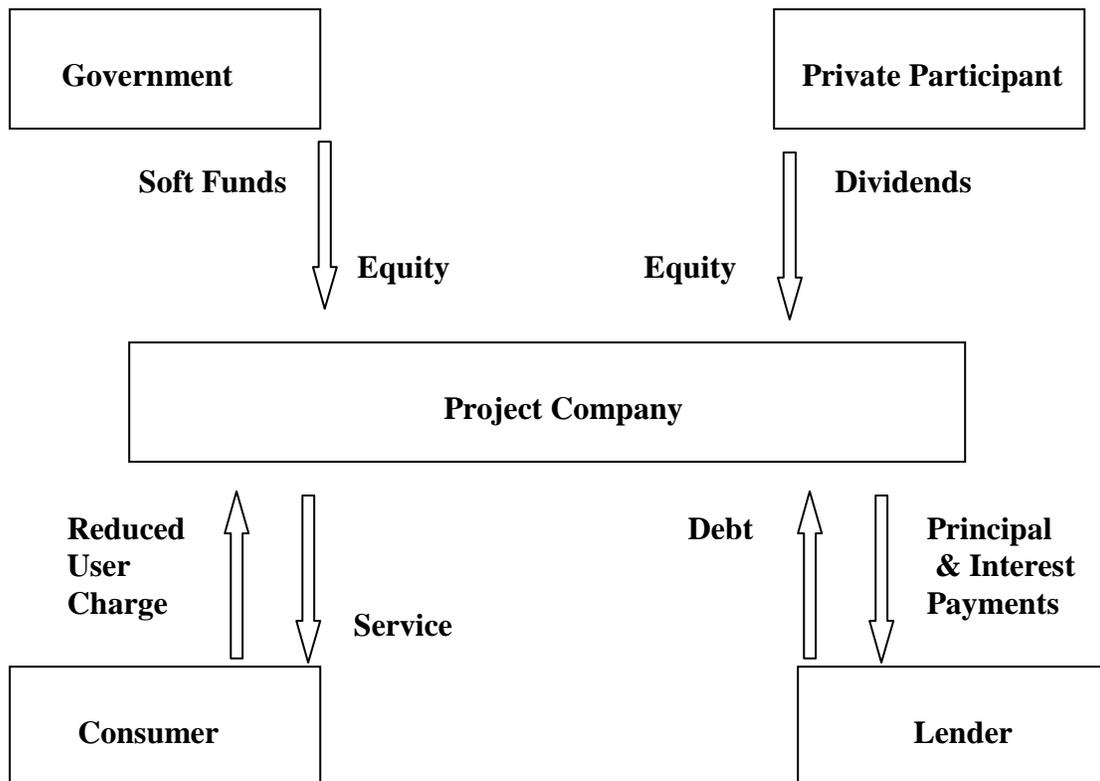
PPP financings often involve the co-mingling of different federally-sponsored tools and private commercial debt.

In developing infrastructure projects traditionally government funds have been used to provide equity, quasi-equity and debt. This in general has not reduced the price of the service offered to the end consumer. There are two innovative models for better utilization of government funds. The objective of this model is to maximize service to the consumer at an affordable price with minimum use of government funds.

Structure I: Soft Funds Model

This model would be particularly useful in the context of micro and medium sector projects. The Government invests soft funds in the project which are not required to be serviced, hence bringing the price by the user down.

Figure 1: Soft Funds Model



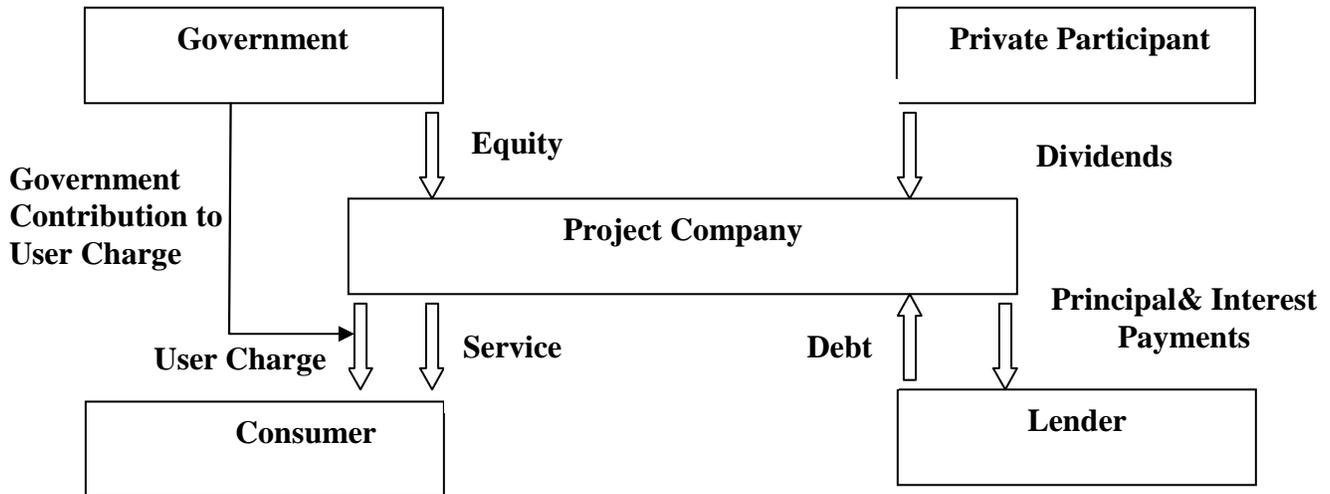
Remarks:

- Government provides Soft Funds to the project.
- Attracts top class Private Sector Participants and Private Sector Efficiencies.
- User charge reduced as government funds do not need to be serviced
- Control Mechanisms in place.
- Assign / Takeover in cases of deficiency in service

Structure 2: User Price Rationalization Model

This model would be particularly useful in the context of medium and larger scale projects this model can be used. Government does not invest, Private Participants invests, user pays for service but government rationalizes the price of the service.

Figure 2: User Charge Rationalization Model



Remarks:

- Typically Build Own Operate (BOO) Model
- No upfront investment
- Attracts top class Private Sector Participants and Private Sector Efficiencies
- Government able to use long term planning and resource allocation
- Control mechanisms in place
- Assign/ Takeover in cases of deficiency in services

Risk Sharing Approach

The key to the PPP process is the sharing of risks between the parties. Effective PPP models involve sensible division of roles and fair sharing of responsibilities, costs, and risks between the public and private sectors. Optimal, not maximum, assignment of risk is the principle that needs to be adopted. This starts with the identification and valuation of risks, which then need to be suitably allocated between the public and private sectors if a project is to be successfully structured. To maintain value for money risks should be allocated to the parties best able to manage them. In

allocating risk, it is a general principle that risk should be carried by the party which is best able to control, manage, or mitigate that risk. Certain risks are transferred to the private sector such as design risk, construction risk and operational risk, incidental to running any business. Risk transfer is supposed to outweigh the increased cost of borrowing by the private sector that will have to obtain the finance from an investment bank at a more expensive rate than the government.

Some of the generic risks involved in a typical project are listed below:

- Project Cost and Completion Risks
- Demand Forecasting Risks
- Revenue Risks (Tariff & revenue leakage)
- Technology Risks
- Performance Risks
- Environmental & Social Risks
- Political Risks
- Legal & Regulatory Risks
- Labour Risks
- Foreign Exchange Risks

The high degrees of economic externality of public infrastructure, and the commercial and socioeconomic risks involved in developing and operating them, have made it difficult to appropriate returns from infrastructure investments.

Benefits of PPPs

This partnership model is set to be beneficial for the government, the private sector and the society. The following are the main benefits of PPP:

- **The Privatized Strength**

The emergence of PPPs is seen as a sustainable financing and institutional mechanism. PPP projects lead to faster implementation and reduced lifecycle costs. Private management also increases accountability and adds incentive to performance and maintenance of higher service standards.

- **Optimal Risk Allocation**

The long gestation period of infrastructure projects require sustainable financial and operational capacity. Therefore, there is increasing reluctance in both sectors to absorb all the costs and the risk of building and operating these assets alone. Since the private sector assumes the risk of nonperformance of assets and realizes its return if the assets do perform, the PPP process involves a thorough and full-scale risk appraisal. This results in better cost estimation and more rational investment decisions.

Implication for Public – Private Partnerships

Some of the key factors that need to be in place to encourage effective public-private partnerships are as follows:

- The key factor for the successful PPPs lies in the ability of local participants to induce and sustain a collaborative process involving a wide variety of organizations, groups and individuals in pursuit of a common goal. Abilities, in this sense, are both harnessed and developed in a virtuous cycle of personal and organizational development.

- Effective PPPs must balance the need to produce both public value and private gain if they are to be sustainable. They must serve a learning function which allows participants and stakeholders to build the collaborative and technical skills which the wider community needs.
- Critical success factor for effective PPPs is improved government accountability and performance. Governments such as municipal councils must be able to understand costs and performance standards. They must
 - Be able to structure performance contracts
 - Have an effective monitoring capacity.
 - Show sufficient stability and consistency to engender a sense of trust in outside groups with whom they have co-producer relationships.
 - Operate with more accountability and transparency.
- Private firms have a new role in demand-making for policy change in addition to carrying out operational tasks. They frequently must form alliances and networks with other private sector organizations.

India’s Experience

There is a large gap between the demand and supply of essential social and economic infrastructure and services in India. Since the opening of the Indian economy in 1991 there have been several cautious attempts at PPP. However, most PPPs have been restricted to the roads sector. The Government of India is committed to raising the investment in infrastructure from its existing level of 4.7 percent to around 8 percent of gross GDP. Infrastructure shortages are key binding constraint in sustaining and expanding India’s economic growth and making it more inclusive for the poor. The government is actively promoting PPPs in the key infrastructure sectors of transport (roads/highways), ports (air, sea, container), telecommunication, water supply, waste management, tourism, power, industrial infrastructure, urban infrastructure township development, leisure, and health.

Over the past decade a large number of projects have been successfully implemented through the PPP format. Table 1 below provides details of the total investment in projects by type and primary sector that have been implemented under a PPP framework by the end of year 2011:

Table 1: Total Investment in Projects by Type and Primary Sector
(US \$ Million)

Sector	Concession	Divestiture	Greenfield project	Management and lease contract	Total
Energy	22	8,943	108,311	144	117,420
Telecom	0	3,236	77,959	0	81,196
Transport	35,035	0	21,163	0	56,198
Water and sewerage	108	0	245	2	355
Total	35,165	12,179	207,678	146	255,169

Source: Private Participation in Infrastructure database, World Bank

Most infrastructure projects with private participation fit in one of the four categories indicated in the table. But the boundaries between these categories are not always clear, and some projects have features of more than one category. In these cases projects have been classified in the category that better reflects the risk borne by the private sector

Table 2 below provides details of the number of projects that have been implemented across sectors up to the year 2011.

Table 2: Total Projects by Primary Sector and Subsector
(US \$ Million)

Sector	Sub-Sector	Number of Projects	Total Investment
Energy	Electricity	215	116,589
	Natural Gas	5	831
	Total Energy	220	117,420
Telecom	Telecom	37	81,196
	Total Telecom	37	81,196
Transport	Airports	7	4,527
	Railroads	8	7,246
	Roads	238	37,309
	Seaports	34	7,116
	Total Transport	287	56,198
Water and sewerage	Treatment plant	4	195
	Utility	8	160
	Total Water and sewerage	12	355
Total		556	255,169

Source: Private Participation in Infrastructure database, World Bank

India has developed a large number of projects through these arrangements as mentioned in Table 2. There is a clear demonstration in evidence that the private sector is a willing participant in PPP arrangements in the country and that there is a substantial level of capacity to undertake projects if offered.

Table 3 below provides details of number of projects that have been implemented and their respective investment in primary sector between year 1990 and 2011.

Table 3 : Number of Project & Investment by Primary Sector

Year	Energy		Telecom		Transport		Water and sewage		Total	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
1990	0	0	0	0	1	2	0	0	1	2
1991	1	614	0	0	0	0	0	0	1	614
1992	2	13	0	0	0	0	0	0	2	13
1993	3	1,051	0	0	0	0	0	0	3	1,051
1994	1	311	4	97	1	125	0	0	6	533
1995	6	1,008	10	683	0	0	0	0	16	1,691

1996	6	1,553	6	1,229	4	182	0	0	16	2,964
1997	2	970	4	3,827	6	405	0	0	12	5,202
1998	7	1,066	2	673	10	302	0	0	19	2,041
1999	8	2,500	0	1,045	13	467	0	0	21	4,012
2000	8	1,954	0	682	2	96	1	0	11	2,732
2001	3	240	7	3,415	5	351	1	2	16	4,008
2002	6	390	0	5,008	9	719	0	0	15	6,118
2003	8	913	0	2,080	19	579	0	0	27	3,572
2004	12	4,256	0	3,701	7	1,141	1	111	20	9,210
2005	7	910	0	5,666	14	1,527	1	0	22	8,102
2006	18	5,501	0	6,823	54	10,028	0	0	72	22,352
2007	17	10,236	0	8,168	34	3,925	5	142	56	22,472
2008	21	12,889	0	9,934	16	5,424	2	76	39	28,323
2009	27	24,504	2	7,830	13	4,872	1	24	43	37,229
2010	36	37,670	2	20,335	57	14,221	0	0	95	72,226
2011	21	8,870	0	0	22	11,833	0	0	43	20,703
Total	220	117,420	37	81,196	287	56,198	12	355	556	255,169

The track record of a large number of PPP projects in India establish that the quantum of investments required in the infrastructure sector could be mobilized to meet demand. The largest number of PPP projects are in the roads and bridges sector, followed by ports, particularly Greenfield ports. According to a Morgan Stanley report, more than Rs 1000 billion worth of PPP projects are under development in India. The PPPs are seen as an important tool for producing sustainable infrastructure investments, and catching up with the infrastructure deficit in the country.

Infrastructure projects implemented on a PPP basis provide an innovative framework to secure specific desired results. For instance, the private sector assumes the responsibility, obligation and risks of constructing, operating and maintaining the asset at a specified level of service for a period of up to 30 years. The projects are typically domiciled in SPV which is typically a legal entity incorporated under the Indian Companies Act, 1956. Each SPV develops the on-the-ground capabilities to discharge its responsibilities. Under a PPP framework a minimum level of service is guaranteed over an extended period of time. At the end of the period, the asset is handed over to Government free of cost.

The government has established the Viability Gap Funding scheme as a special facility to support the financial viability of those infrastructure projects which are economically justifiable but not viable commercially in the immediate future. It involves upfront grant assistance of up to 20 percent of the project cost for state or central PPP projects that are implemented by a private sector developer. Government of India has established India Infrastructure Finance Company Limited (IIFCL) in January 2006 as a wholly government-owned company to provide long-term finance to infrastructure projects, either directly or through refinance. The IIFCL caters for the burgeoning financing gap in long-term financing of infrastructure projects in the public, private, or PPP sector. Any government project awarded to a private sector company for development, financing, and construction through PPP will have overriding priority under the scheme.

It is also well recognized that an essential aspects for the successful growth of the infrastructure sector in PPP terms is good governance. Over the past fifteen years significant progress has been evidenced in this regard. The PPP approach, however, provides a framework for higher quality of services, resulting in higher recoveries, which in turn, enables greater ability to invest and improve the quality of services overtime. The PPP framework provides a sustainable and proven method for government to accelerate the provision of infrastructure services in our country, to global standards, keeping in mind, the principles of transparency, accountability, equity and inclusiveness.

The following are some notable examples of successful infrastructure PPP projects implemented in India in recent years:

- Water supply projects in cities such as Vishakhapatnam, Ahmedabad, Ludhiana, and Nagpur
- West Bengal has recorded significant success in housing and health sectors.
- Andra Pradesh, Punjab, Gujarat, Karnataka, Kerala, Madhya Pradesh, Tamil Nadu and Maharashtra have had success especially in ports, roads, airport, power and urban infrastructure.
 - Bangalore-Mysore Infrastructure Corridor
 - Hyderabad International Airport at Shamshabad
 - Surendranagar Mahuva Gauge Conversion (Gujarat)
 - Pipavav Port
 - Development of Integrated Waste Processing and Engineered Sanitary Landfills in Bangalore
 - Cochin International Airport
 - Indore-Sanawad- Burhanpur-Edlabaad Road
 - Mumbai – Pune Expressway
 - Up-gradation, operation and maintenance of Amritsar bus terminal
 - Karur Toll Bridge
 - Tirupur water and sewerage project in Tamil Nadu is a promising example for privately financed BOOT project in India, executed through an SPV.
 - Delhi-NOIDA toll Bridge Project, implemented on a BOOT framework on the basis of a 30-year concession

Possible Improvements

Despite of proven track record of the success of PPP in India, more attention need to be given for further improvement in the operational mechanism of this sector:

- **Need to publicize the size of business opportunity for PPP in Private Sector**
The World Bank estimates that total investments of \$425 billion are needed in infrastructure until 2010-11 and that there is a financing gap of \$123 billion. This is the size of the business opportunity in PPPs in India over the next 5 years. The government needs to publicize this effectively to the private sector in India and abroad to tap the potential of private participation to meet its needs.
- **Improvement in regulatory and policy environments**
The weakness in the enabling environment for PPP may prove to be a constraint. The private sector participation in infrastructure requires a well designed framework of policies in which investors have the assurance that standards of services will be

maintained and concessions will be transparently awarded. The government needs to be attuned to the international best practices for development of policies and frameworks that facilitate PPPs.

- **Prequalification, bidding and procurement procedures need standardization**

Given the variations in the formats, bidding procedures and overall execution of the PPPs among the various states in India, there is a need for standardized prequalification and bidding procedures and guidelines for ensuring efficiency and ease of approval process.

- **Maintaining Transparency**

The Government has to move towards competitive bidding and maintenance of transparency in the award of infrastructure projects.

- **Improving the credibility of structure of projects**

Many government projects have suffered from time and cost overruns, quality issues, irregular cash flows from budgets and shortage of competent people. If the project is appraised and structured in a credible manner, the financial structuring part becomes much easier. This can only be achieved through rigorous project development and comprehensive risk and return analysis by the government.

- **Address risk and return perception of foreign investors**

The foreign investors are still wary because of small project size, discomfort with existing legal and regulatory frameworks, currency risks and market risks. For project-specific considerations, foreign investors look out for unmet demand, revenue potential, demonstrated project viability, and political commitment to the project. Hence, the government needs to consider the kind of environment that could be attractive to foreign investors.

- **Provide adequate protection for lenders**

PPP projects often raise debt funding on the basis of a limited-recourse project finance where lenders rely merely on project assets and cash flows and do not have recourse to the project sponsors. Therefore, PPP design and documentation should provide adequate protection to debt service against noncommercial risks related to regulatory changes, contract termination, etc.

- **Proactive public communication and stakeholder management**

Many PPPs have failed owing to strong opposition from civil society, local media, and other stakeholders. PPPs have also been confused with privatization. Lack of public support have increased project costs, delayed project completion, and ultimately jeopardized the sustainability of public services. It is important for the project sponsors to disseminate information among the various stakeholder groups about the virtues of partnership options and convince them about the benefits that would accrue to them. Feedback and consultations with tariff-paying citizens, labor unions, relevant government agencies, private investors, civil society organizations, and media will ensure support, client focus, and improved overall coordination of the project.

Conclusion

Infrastructure development is essential for India to sustaining economic growth and improving competitive position in today's global markets. The preceding evidence shows that well-designed private participation schemes can produce real improvements in the quality and quantity of infrastructure services, as well as major benefits for the efficiency of provision. PPP becomes important for the primary reason that the government does not have unlimited capital

for investing into building infrastructure facilities, providing for public health and safety needs and ensuring a sustainable economic growth.

The emergence of PPPs is seen as a sustainable financing and institutional mechanism. India is increasingly adopting PPPs as an alternative to the traditional in-house provision/procurement of public services. PPP projects lead to faster implementation and reduced lifecycle costs. Private management also increases accountability and adds incentive to performance and maintenance of higher service standards. Government can reduce the costs and risks borne by taxpayers; the private sector can generate business opportunities; and the public can receive better or more accessible services.

The quality of regulation will be important in determining the extent to which pressures for efficiency are introduced. Although regulation may be difficult in India with limited capacities, it should be remembered that the regulatory function like setting prices and quality standards, and monitoring and enforcing compliance with these exists whether companies are in public or private hands. Experience has shown us that fundamental conflicts of interest mean that governments generally do a poor job of combining regulation with ownership of service provision. Therefore, there should be more effective regulation when provision is from the private sector. The success of PPP projects requires a single objective of better services for the public at a reasonable cost. This is achievable through realistic and reasonable risk transfer while addressing the public concerns. In this pursuit, easy availability of long-term private capital is an essential requirement.

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