

# Application of PPP Mode Based on the Concept of Public Environment Optimization in China

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**Abstract.** China's urban infrastructure and public service facilities have been established through the governments' investments, while in recent years, demands can't be satisfied at if only invested by the government to establish infrastructure and providing public services. The introduction of PPP mode, through joint cooperation and development between the government and the private sector, sharing risk and liability in construction, can effectively solve the "bottleneck" of the insufficient government funds in the process of public environment optimization. This article discusses about the relevant concept of PPP mode, focuses on analyzing cases of PPP mode all over the world and has proposed some suggestions on some aspects, such as how PPP mode could accelerate the construction of infrastructure and could evenly provide high-quality public service.

**Keywords:** Public environment optimization, equalization of public services, Public-private-partnership mode, civil management.

## 1. Background and Significance

Though great progress had been made, the infrastructure construction in China is still restricted by financial fund of the state, which leads to the shortage of funds of infrastructure construction. It has become the "choke point" of the further equalization construction of public service facility in China. Currently, introducing private capital and giving play to private capital effect in the field of infrastructure have been a consensus of theoretical and practical circles. But owing to the huge amounts of investment in infrastructure, the long construction period and industrial chain, the large amount of investment, and high specialties as well as technicality, it is not easy for dispersed private capital to enter such field. Therefore, learning from and introducing the PPP mode used in the infrastructure construction of the western developed countries has very important significance in promoting the privatization of the infrastructure construction of China.

## 2. Definition and Classification of PPP Mode

### 2.1. Definition of PPP mode

PPP mode is Public-private-partnership (Public- private- partnership) or PPP. PPP itself is a complex and broad concept. There are always divergences of defining its concept in various fields of different countries. Here are several major international definitions:

**UN Training and Research Academy's definition of PPP:** PPP includes all of institutionalized cooperation mode among the advocates of various social systems, on purpose of solving some local or regional complex problems in the future. PPP has two meanings: the first is the various cooperative relationships between public department and private department in order to satisfy the demand of public products; the second one is to build the collaboration partnership between public and private departments on the large public projects.

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**PPP, as defined by European Commission,** is a kind of cooperation between public sectors and personal sectors through which public programs and services can be provided by public sectors traditionally.

**PPP, as defined by the American PPP National Committee:** PPP is a kind of public products delivery, which falls between outsourcing and privatization, and combines the both features. It makes the best use of private resources to carry out the design, investment, construction, management and maintenance of infrastructure project, and offers interrelated service to satisfy public demand.

Now, there isn't a recognized standard definition of PPP mode at home and abroad, but the core understandings of PPP mode include: the participants include the government and private sectors whose relationship are partners providing public goods and service together for a "win-win" situation. In a broad sense, PPP refers to the various cooperative relationships established between public departments and social investors to provide public products or services. The narrow definition of PPP is the name of a series of projects financing mode, that is to say, both of government departments and the social investors put funds or resources into the projects, and it is constructed and managed by social investors. This mode includes BOT, BTO, R+P etc.

## 2.2. Classification of PPP mode

PPP mode classification contains great difference, and its stage of development is also different. In China, modes of PPP are generally divided into three categories: outsourcing, franchising and privatization, as shown in Fig. 1.

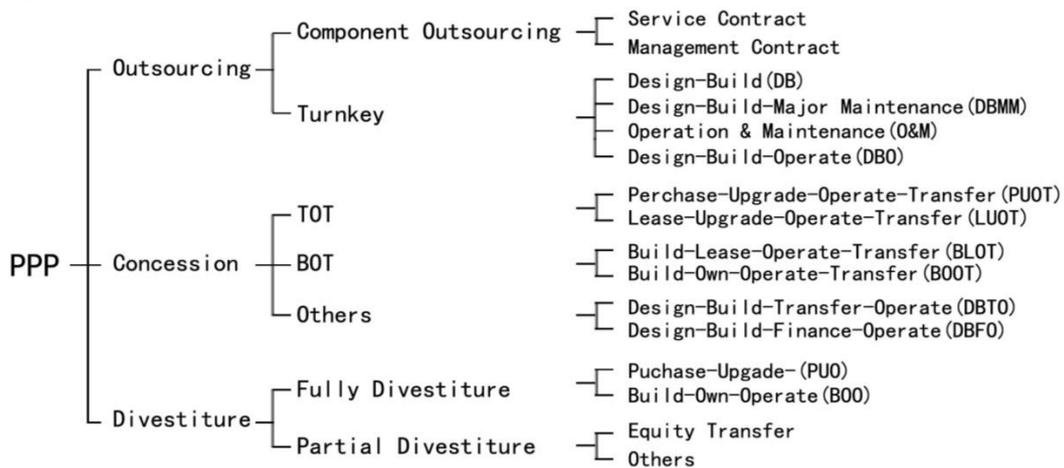


Fig. 1: classification of PPP mode

## 3. Relevant Theories and Practices

### 3.1. Relevant Theories

The application of PPP mode has been popularized in many countries around the world, such as the US, the UK, France, Australia, South Africa, Singapore and other developed countries, as well as China, Brazil and other developing countries. Divided by the level of market maturity of PPP, countries that apply the PPP mode can be abstractly formed into 3 echelons.

The first echelon includes developed countries such as Britain and Australia, of which the PPP is of the highest level in terms of complex and action with the highest market maturity at the same time. The second echelon includes Netherlands, Italia, New Zealand, Ireland, France, Canada, America, Japan, Germany, etc., of which the level of complex and action of PPP is lower than that of countries in the first echelon but still at the relatively high level with higher market maturity of PPP. Countries in the third echelon include China, India, Russia, Hungary, Czech Republic, Belgium, South Africa, Denmark, and Brazil. In these countries, public-private partnerships is not complicated and active, meanwhile, the market of PPP is still young. The resource of the following analysis is selected from the British PPP practical case.

### 3.2. Relevant Practices

Objectively speaking, the UK now is universally regarded as the user of the most advanced PPP modes and plays a leading role in terms of the ability and level of PPP application in various fields. As the first country to propose PPP concept, the UK, since 1990s, has successfully applied PPP mode into transportation, public utilities and community establishment, and made progress and fulfilled achievements in the construction and application of medical care, education, prison and local government's undertakings.

Britain has already formed a normative extension system of PPP mode, which many institutions commonly participate in, including International Financial Services London, PUK, National Audit Office, Public Accounts Committee, Local Project Monitoring Group and so on. As facilities, England government established the "Power Supply Control Office", "Water Service Control Office", and "State Administration of Rivers". At the same time, the key regulations issued by the British government in the privatization of the industries of telecommunication, coal gas, tap water and electricity provide main stipulations about important government regulation of the industries in order to prevent monopolization.

## 4. Application and Challenges of PPP Mode in China

### 4.1. Application of PPP Mode in China

At present, Chinese nation is at the early stage of rapid economic growth, we need a huge demand for investment, and China's fiscal capacity cannot meet the requirements of the construction of infrastructure. And the rapid rise of private enterprises also provides conditions for the application of PPP model in China. In order to meet the needs of the current economic development, China has formulated a series of policies and regulations, such as the "The Measures for the Administration of Franchise of Municipal Utilities" in 2004 and "The State Council's Opinions on Encouraging, Supporting and Guiding the Economy Development of the Individual, Private and Other Non-public Sectors" in 2005, which further accelerated the the application of PPP model in the public services. According to World Bank's statistics, from 1990 to 2010, in the field of China's public service facilities, there had been 949 projects in total which were invested by the private sectors in the field of Chinese public service facility, including 370 energy projects, 4 communication project, 225 transportation projects, 350 water drainage projects, with total amount of investment capital reaching 112.852 billion U.S. dollars.

### 4.2. Practice Cases of PPP Mode in Public Environment Optimization in China

**Beijing subway Line 4** as shown in Fig. 2 is the first case using PPP mode in China, and is always researched as the case of PPP financing by scholars at home or abroad. In 2005, the Beijing Capital Group Co. , LTD and Beijing Infrastructure Investment Co. , LTD. , plan to form a chartered companies and invest according to the proportion of 7:3, the franchised company obtained the chartered right of constructing and operating the Beijing subway line 4. Beijing city is in charge of the civil engineering of pathway, chartered company is in charge of the investment and construction of vehicle, signal, communication and other main equipment of line 4, and is in charge of the operation and management of line 4 in the 30 years of concession period, after the concession period, the chartered company will handed over project equipment to the Beijing municipal government for free. Having been opened to traffic from 2009, this project which creatively expanded and applied the PPP mode gets great early success and now has good construction process.



Fig. 2: Beijing Metro Line 4



Fig. 3: Beijing Olympic Venues

**The Olympic National Stadium Project** also adopted PPP cooperation project, with 58% of the funds provided from Beijing government and 42% provided from cooperative private companies, the latter was also in charge of the design, investment and financing (except for the government part), construction, operation and transfer, and acquired the management right of the national stadium 30 years after the 2008 Olympics, as shown in Fig. 3.

Under the perspective of equalization of public service, PPP mode not only has successfully eased governments' financial burden and relieve the phenomenon of uneven distribution of public service equipment and poor public service quality due to governments' financial shortage, but also has introduced competitive mechanism and improved the construction efficiency of public service equipment.

### **4.3. Challengers of Application of PPP Mode in China**

PPP mode is a sort of newly birth financing mode to China of which the government and the private sectors are lacking experiences. The organization form of PPP model is extremely complex, and the differences on benefits and responsibilities of different levels and different types will inevitably show up among all parties, which also inevitably lead collapse and failure to some cooperation projects. Since the introduction of PPP model, there have been many cases of failure in China, such as the Chinese Power Project, Hangzhou Bay Bridge and the West Coast Highway. The failure of these PPP projects has many reasons, such as the governmental credit, tax policy, risks of the market price, and etc.

PPP mode with Chinese characteristics is facing various challenges. Chinese government is inexperienced, when it comes to the long-term planning for the PPP. Both National Development and Reform Commission and Ministry of Railways carry on the financing based on the project itself; Although China currently has developed a number of policies and regulations to encourage non-public enterprises to enter the field of public services facilities construction, there has not formed a complete legal system to ensure the private and the people's interests. At the same time, the PPP model in the aspect of interest distribution, risk bearing is easy to produce a lot of disputing problems. The laws and regulations of investment in China is not complete enough, and there is no clear legal documents or operational laws for guiding the private enterprises to participate in infrastructure construction, which can not make the private enterprises effectively restrained when they get involved in the PPP projects, so then it is easy to produce problems on various stages, such as the project designing, financing, operating, management and maintenance, as well as the public property disputes.

## **5. Conclusion and Suggestions**

Optimization of public environment is in its essence the problem of the construction of financial system, rather than that of the service itself. Considering international experience, when it comes to the strategy of equalization of fundamental public service, almost every country definitely emphasizes the importance of the equalization of financial capacity or the demand. It mainly lies in that it needs to be realized through the equalization of fiscal capacity even emphasising the equalization of fundamental public service.

PPP mode has played a large role in boosting the Optimization of public environment. And the innovative fiscal financing provides the financial guarantee to the Optimization of public environment. Meanwhile, it cannot be denied that China still has quite a lot of problems of PPP mode in the application of public service. Referring to experience in successful operation of PPP model of other countries and combining China's current specific conditions, the text proposes some suggestions on the application of PPP model in the field of public service in China:

**Government should establish and complete as soon as possible the management methods and policies as well as regulations related to PPP model.** PPP, as a kind of contractual investment model, needs a set of systematic legal provision, as its basis to make both sides of the contract have rules to follow and to reduce disputes. On the other hand, both the central and local governments should be given definite rights of examination and approval to increase the elasticity during operation. Therefore, the country should make specific regulations on policy making and implementing to ensure the government's interests and boost investors' confidence, which are beneficial to the development and quality promotion of public service facilities in order to achieve the equalization of those facilities in urban and rural areas.

**Specialized PPP project management department or investment management institutions as well as relevant arbitration institutions should be set up.** Most of the PPP projects are carried out between the government and the private enterprises or financial groups. As investors, they always hope to negotiate with the organizations, which are specialized to undertake the PPP projects, because the management forms professional organizations towards public service facilities is more systematic, more standardized and more scientific. The governments should set up specialized PPP administrative departments or institutions, which also can avoid the disadvantages, such as multifarious administrations in government departments, passing the buck to each other between departments, and project operating process being far away from the criterion, and thus benefit to the promotion of PPP-model financing of public service facilities projects in China.

**When considering whether to choose the PPP model and what kind of PPP model should choose, there is no "one size fits all" and we should adjust measures to adapt to local conditions.** The answers to the questions such as whether models of PPP should be selected, which kinds of PPP models are to be selected and how the results of operating PPP models are vary in different countries and different regions of the same country due to the differences in local governments' systems, policies, laws and regulations. Therefore, different ways should be selected according to economic systems and policies in different regions. Otherwise, the factors that determine PPP mode also include the position of projects themselves. PPP models can be suitable for many circumstances such as a certain link of a certain programme or the whole process of a programme. They can be applied to an entire programme or a certain link in the process of a programme such as programme design, programme management and financing, which all depends on concrete situations.

Serious challenges exist in terms of Chinese public service, such as the high pressure of the demand of public service, undersupplying of public service, uneven distribution of public resources, weak effect of redistribution of public service, nonstandard public service and poor responsiveness of the main body of public service, among which the leading issue is the imbalance between supply and demand of public service. In the process of the equalization development of public service in China, the implementation of PPP financial mode has effectively relieves the problems such as the undersupplying of public service and the imbalance between supply and demand, and has played a positive role in promoting the equalization of public service.

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