

The experience and enlightenment of the management of Beijing urban rail transit civil communication resources

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Abstract. The civil communication project plays a more and more important role in urban rail transit non-ticketing business. The civil communication system of urban rail transit is build up in the urban rail transit network, which is the extension of urban public communications network on the ground. It is the one which can provide the passenger value-added service. By analyzing the four main management modes of the civil communication in Beijing, we can draw a conclusion that it's very important to select the appropriate management and development mode of the civil communication resources in urban rail transit.

Introduction

Statistics indicated, China has become the fastest-growing country on urban rail transit in the world. By the end of 2014, 22 cities have 94 urban rail transit lines in operation length in the mainland of China. The total length is 3155 km. Among them, the length of operation lines in the top three is Shanghai, Beijing and Guangzhou, respectively, 643 km, 605 km and 246 km. The civil communication system of rail transit is build up in the urban rail transit network, which is the extension of urban public communications network on the ground. With the rapid development of urban rail transit, advertising, property development, commercial, information and communication and other resource management which derived from urban rail transit construction and operation, has grown remarkably. All above not only make life convenient, but also promote sustainable development of urban rail transit. The civil communication system of urban rail transit is build up in the urban rail transit network, which is the extension of urban public communications network on the ground. It's the system which solves the problem of rail transit paging signal blind spot ensuring by which passengers can use the mobile communication tools supported conveniently, and theirs' demands for travel information can be met.

The civil communication system of urban rail transit in Beijing

The first civil communication system of urban rail transit serves 2008 Beijing Olympic Games, which was founded in 16 underground stations in Beijing metro line 5. By the end of 2015, there will be more than 265 underground stations which realize over all indoor coverage. With the development of communication technology, such as 2G, 3G and 4G, passengers can Surf the Internet at all times and places. Generally, the rail transit civil communication system is an

integrated system, which mainly includes four subsystems, transmission system, wireless distribution system, centralized monitoring alarm system and power supply system.

Transmission system It is also constructed independently, which can provide the basis channel for network. It's a pivotal subsystem with many characteristics, such as reliability, redundancy, extensible, flexible, etc. It carry all kinds of information at all times, such as voice, data, alarm, etc.

Wireless distribution system It is an extension of the network which belongs to the civil communication operators. By introducing the signal from ground into the rail transit underground space, we can resolve the blind spot problem.

Centralized monitoring alarm system It plays the role of database to store all kinds of bug information of equipment, which can not only receive alarm information from civil communication subsystem, but also send the corresponding alarm in time to remind technicians dealing with as soon as possible.

Power supply system As the independent and complete power supply equipment, it can provide communication equipment with the uninterrupted, transient, safe and reliable power supply. Meanwhile, it have the function of centralized monitoring management.

Parties involved in the civil communication project

In the last few years, three separation of Investment-Construction-Operation is the dominant mode for Beijing urban rail transit. Along with it, the management mode of civil communication project is also developing naturally. Under the guidance of the relevant industry departments, we can create and keep close relationship between the rail transit company and the communication operators.

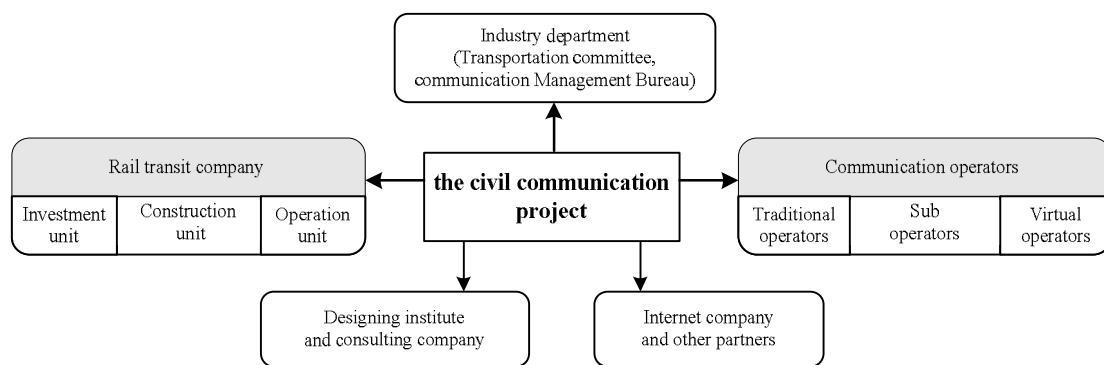


Fig.1 The related subjects for civil communication project

The evolution and Connotation of management mode of the civil communication

We will explain the four main management modes of the civil communication in Beijing as shown in the following figure.

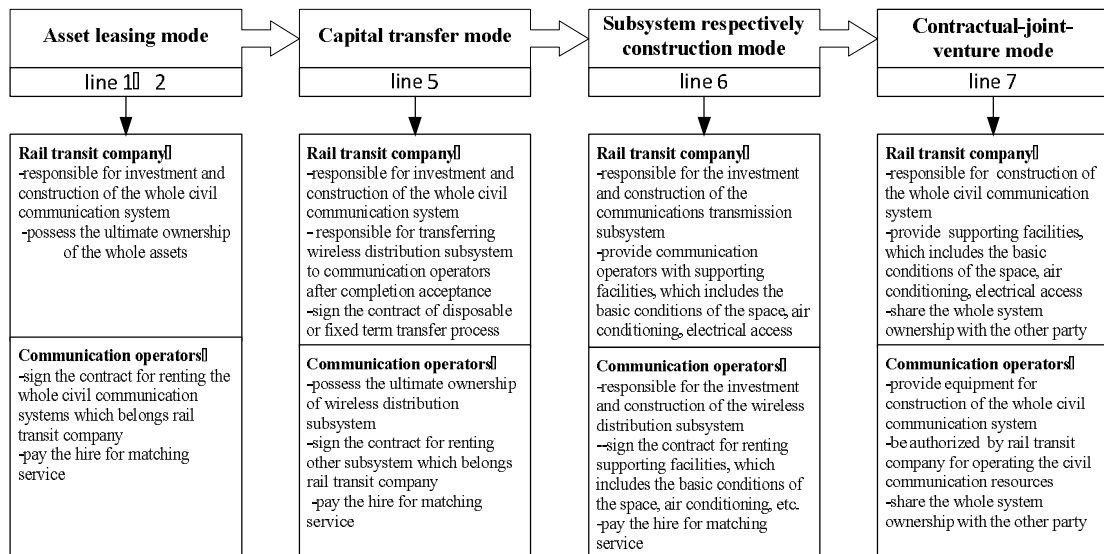


Fig.2 The mode evolution of civil communication in Beijing urban rail transit

The Change for the Role of urban rail transit company

The role of urban rail transit in the whole process can be described to be infrastructure provider, station resource integrator, service content provider. Firstly, by participation in equipment purchase and installation, urban rail transit company provides the fundamental conditions which include fixed space, air conditioning, fire, electricity access, etc. The communication operators pay for the rent of resource usage to urban rail transit company. The single call business is the only service which the communication operators can provide. Secondly, there are many business customers like station stores, ATMs, and VEMs which needs various communication service, such as fixed-line telephone access, internet special line access, wireless LAN access, data broadband access, etc. Urban rail transit company is responsible for the development and nurturing of new customers, and the communication operators are responsible for the development of new business forms. Eventually, the two sides share the total proceeds. Finally, by deeply involving in the whole process of planning, production and operation for civil communication business, rail transit company should pay more attention on providing high value-added content services. On the basis of participating in the construction, maintenance work, rail transit company put the development direction to the right place in the future. The mission of the company is to develop its own content service platform, to provide rail transit television program, and to distribute a variety of information services such as the train operation information, traffic alternative ways, surrounding commercial information, etc. A new corporation will be established by the alliance of rail transit company, the communication operators and the media company which carry out on risk sharing and benefit sharing.

Experience in Beijing

Beijing has become most developed city which possess most complete urban rail transit network and civil communication network in China. With the operation mileage of urban rail transit increasing and the network service (2G, 3G, 4G) of communication operators upgrading, the relationship is becoming more stable, diverse and sustainable. Meanwhile, the fact remains, however, that the income of urban rail transit business and the number of civil communication business lines are still at a low level.

The development of Non-ticketing business is not in step with the development of urban rail transit network, and the level of comprehensive and convenient service is still at a low level. The principal contradiction for the civil communication development would be that between the whole supply of travel services and the whole demand of passenger information in urban rail transit. It should be noted that the development of commercial property has become the critical obstacle for the development of Beijing urban rail transit non-ticketing business.

Enlightenment in Beijing

Closely following the development of the communications industry, gradually achieving the co-development of the urban rail transit non-ticketing business The essence of communication is information transmission. With the rapid development of communication technology, we are experiencing the immense change of life style. As the data released by the Ministry of Industry and Information (MIIT) has shown, by the end of March 2015, the total number of mobile phone users in China reached 1.29 billion, rose 3.6 percent from a year ago. According to eMarketer's data, by 2015 the number of global smart phone users will exceed 1.91 billion, and by 2016, 2 billion. To promote the co-development level of the urban rail transit non-ticketing business, we should strengthen the exchange of information in the urban rail transit industry, and pay more attention to the technology development of the communication industry. Meanwhile, we also should accelerate the civil communication industry upgrading and optimize non-ticketing business structural adjustment.

Strengthen government guidance, create perfect relationship among the parties involved in the project In Beijing, like in other cities of China, local stated-owned investment company is the operation entity for urban rail transit. However, MIIT plays an extremely important role in communication operation. To develop the civil communication project in urban rail transit, the most important thing is to strengthen the government's policies leading and control power. It's the common pursuit of local government, industry department, rail transit company and communication operators, that is not only meet the travel information demand for passenger, but also improve the overall revenue for the parties involved in the civil communication project. Thus, it is necessary to establish an effective mechanism of communication among the parties involved in the project. Ultimately, we can create a perfect development pattern of resource sharing, advantages complementary, the interests enjoying, and joint development.

Define city function positioning and get a clear understanding urban rail transit development stage, then select the appropriate management and development mode of the civil communication resources in urban rail transit Different city have different process characteristics and strategy of urbanization development, which directly influences and determines the development stage and the construction management mode of urban rail transit. Combined with a specific situation, selecting the appropriate management and development mode of the civil communication project have contributed to improve the image and raise the enterprise's return on investment.

Optimize utilization pattern of the urban rail transit business, lead the non-ticketing business integration development in urban rail transit Advertising, civil communication, property constitute the three pillars of the modern business in urban rail transit. The relationship among them is interacting, restricting, influencing and supplementing each other mutually. Information technology is the inherent driving force for business development and the profit growth

pole for the non-ticketing business. To avoid the malignant competition, we need to form a benign mutual acceleration mechanism, and only thus can the economic and social benefits be achieved.

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