

# ***Application of Management in City's Public Transport Systems***

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**Abstract:** In recent years, public transport company gained less profit from their daily operation, and management in these companies are eager to find an effective way to alter such a situation. This paper intends to discover the way for the public transport company to do toward three grades contain negotiating to superiors like governments, managing themselves about their structure and serving for inferiors like citizens. Many cases of public transport operators around the world are analyzed in this paper in order to get a more accurate direction for their development, and some of them did an excellent achievement, research for these companies includes several innovative ideas for operators. The result shows that the more based on mutual benefit and interest, the more profit and reputation would attain. Many kinds of negotiating, managing, and serving methods were introduced in the paper, people prefer the cooperator while their interest is considered in opponent's plan. It is suggested to absorb the idea in corresponding part they need to put into use.

**Keywords:** public transport, negotiation, manage structure, service

## **1. Introduction**

With the growth in motor vehicle ownership all around the world and more convenience for people to call a taxi or do e-hailing, many cities' public transport group faced a dilemma in that they have a big loss of passenger flow, which means the fare they receive have decreased to a large extent.

The management of public transport would be the main topic in this paper, and it also contains some sub-topics, such as negotiating for more financial support from the government and building a transport system that has high efficiency. But absolutely, operators need to improve the structure and solve their internal problems. It's commonly believed that the level of the public transport system in Asian and European cities are higher than that in Middle East and African cities. While most public transport companies in the world suffer deficits every year, those companies in Hong Kong S.A.R. made a substantial profit themselves. Some scholars found that almost 90% of Hong Kong's residents are willing to use public transport rather than private cars [1]. It is also a symbol of urban development. If the bus system loses money, it means the city is unpopular and backward economically. Run a system of overnight buses in a city could be a harder challenge for the company, they need to pay the overnight shift bus driver more salary, while the people flow is less than in daytime, One of the metropolis in China--Shanghai, its public transport company investigated some nights at the commercial center, train station, airport and so on, giving ideas and did a great

transformation of overnight transport system [2]. Under the suffering of the epidemic of COVID-19, many public transports company which subsidized by the local government announced that their service had to pause because it's no allowance. According to a survey from China University of Mining and Technology, public transport company suffered CNY -447,059,000 (about U.S Dollars 64,152,966.50) deficit a year in Changzhou, China [3].

Not only does passenger flow the author mentioned above affects the public transport system, but also lots of wisdom in managing making sense. it contains internal management and external management. Many Asian companies prefer adopting hierarchical structure, which causes some problems and seems a bit impractical. Some scholars had made a reasonable comparison between hierarchical structure and matrix one. Obviously, a matrix structure is meant to balance the power assembled to one leader and spread to the public, supervise and coordinate themselves. It can effectively overcome hierarchical management structure's disadvantages. It's flexible but can be led by several leaders that made employee confused [4]. This paper will analyse it from a different point of view below.

## **2. Negotiate with Superior, Seller and Buyer**

How can an enterprise negotiate with the superior, seller, buyer and so on? There are two major methods: Distributive negotiation and interest-based negotiation. Every negotiating method has its own applicate scope. Generally, firms around the world prefer interest-based negotiation. Though Distributive negotiating methods are gaining fame from their flexibility and moderate competitiveness, interest-based negotiating methods' points lies in mutual benefit between seller and buyer for which their profit was all considered, and they are satisfied with the results because of acceptable compromises.

### **2.1. Distributive Negotiation**

Distributive means two representatives are opposites to each other, and all of them don't eager to make any concession. But the same situation under interest-based conditions won't create a strained atmosphere and is more likely to make a deal. According to the relevant statistics in European Union from 2006 to 2008, distributive negotiation only occupied 0.11% of all because of its complexity [5].

Some distributive negotiations are based on the price, it also fits the case of negotiating to government for allowance or buying cheaper infrastructures from the government. Mostly the form of distributive negotiation is a call for bids. Governments may collect prices from each other and choose the best public transport company to hold the operating rights. So the company takes responsibility to contend with other companies and negotiate to the government. The public transport company is middle leveled, they can also call for bids from inferiors, like suppliers and manufacturers to get better service and make itself competitive, winning distributive negotiation in any form. But it may cause malignant competition, reducing their price for many times and leading to an unsuccessful deal. To avoid these cases, buyers can improve their evolution system with the concept of cost performance, including third-party assessments like higher-level government or other suppliers [6].

### **2.2. Interest-based Negotiation**

Public transport companies could adopt interest-based negotiation first, interest is a vital factor to both sides that they start a cooperative relationship. It is common in interest-based negotiation to give compensation in order to reach the opponent's demand positively. But what count is the compensation that is given would be a low-impact one, using this marginal condition to the steady whole structure of the negotiation. Any compromises are serving the ultimate success. Before maximizing benefit, both sides should definite that the negotiation is based on trust and information sharing. Besides, the

public transport company can find sponsors for development, like selling stock to them and making them believe that the public transport company they invested have substantial potential and promise the government that back certain commissions if they invest in it.

### **2.3. Combination of Distributive and Interest-based Negotiation**

In an interest-based negotiation with the government, making a concession is a choice that is not so well. The negotiator should explicitly clear their WATNA (Worst Alternative to a Negotiated Agreement), thus they can judge whether the choice will hurt themselves. At the same time, negotiators will be more likely to set up BATNA (Best Alternative to a Negotiated Agreement), which means they can turn to another agreement which accesses more benefits. If the public transport company comes across a hard negotiation with the government to the allowance, they can combine interest-based negotiation and distributive negotiation such as extending their business route to other suppliers for support or outsourcing. For finding a supportive investor, a negotiating file and confirmation can be drafted, then examine the response from the supplier before putting forward the power. As for outsourcing, choose at least 3 suppliers to participate in the procurement projects which meet the eligibility requirement. The second time choose is about those purchase items which demand ambiguous, the negotiating group can restate their needs and decide what the essential blueprint and vote by ballot [7].

## **3. Interior Management of a Company**

This part is for the company itself. Interior management is of great importance. Two structures will be introduced are hierarchical structure and matrix structure. As a general company, they could make a comparison to choose what structure should the company adopt depending on which type of management is.

### **3.1. Hierarchical Structure**

It is recognized hierarchical structure could be more autocratic than a matrix structure, so hierarchical ones tend to use in some vital even fatal industries, just like the infection department in hospitals. The infection department usually take method like managing in one voice. They need to divide their responsibility into distinct levels [8]. What's more, management by colleagues sometimes unadvisable in a hierarchical company, a hypothesis can be made that a worker should expose another worker's mistake to take a bonus, the worker who makes mistake was fined, it may cause uptight and strained feeling in a company, employees will lack the sense of belonging to the company in a period of time. Now that adopting this structure, everyone should obey the corresponding level's rules.

### **3.2. Matrix Structure**

But isn't fit most transport companies, the matrix structure would be better. The concept of the matrix is from mathematics. Enterprises like banks and transport groups generally contain two parts of management, the first one is a traditional department, which aims to deal with their certain missions, the other one is specialized by a group of people to complete the mission, they will back to the primitive department after the work has done. These crosswise groups cross over original vertical groups, generating a new system like a matrix. There are 5 advantages of matrix management. The first is playing a successful role in the functional department while completing the work. Secondly, coordinate with each other and absorbing in good ideas from everyone's mind. Thirdly, it averts the repetitive labour cost, lifting up the efficiency of the program. The fourth is to learn and stimulate each other. The last one would be the hoisting capacity of management. Many people all over the

world are fascinated by its flexibility but no one can deny that sometimes matrix structure doesn't make sense just like employees are confused whom they should follow because there are two leaders or more [9]. Apart from the managing structure, financing is a popular way for a transport company for interior managing.

## **4. Suggestions**

### **4.1. Public Transport Company Collaboration**

Except for the government's allowance, running a public transport company could be fund-intensive, it is characterized by high input and tiny even minus profit, so only improving the interior management is far from enough. Aim at some public transport companies, probably hard to finance internationally, financing rent their buses or doing an operating lease is an excellent way for them to cut down the deficit and increase revenue. These strategies can effectively decrease company's financial risks. What's more, if a company has the strength to cooperate with other listed companies, they can unite and sell stock to public. Operating a lease has its own flexibility, not only the method does not influence company's debt structures and financial situations, but also put their buses in full use, obtaining a high proportion of the rate of loading, and sometimes this mode is outsourcing like. Choosing an outsourcing company is full of skills, companies might use the distributive negotiating strategies the author mentioned above.

### **4.2. Keeping up with the Trends**

For any public transport company, passenger flow occupied a large part of its daily operation. But some brilliant executives dope out with innovative ideas to make more profit for the company, which means the company is not just relying on the passenger flow and transport fare to survive but depends more on financing and revolutionary methods. Meanwhile the market of transport and the concept of people changing all the time, attracting always the best way.

### **4.3. Public Transport Planning**

The last part is the ultimate part, it is mainly about how to plan and design the public transport system and let the citizens willing to take public transport. Take Hong Kong's Public Transport Company as an example, the data for 2021 shows Hong Kong has 7,413,000 people and its population density raised to 6,801 per square kilogram. Without a doubt, Hong Kong has a situation that is more people and less land. But everyone can hardly see the city stuck in the problem of traffic jams. The nearly 90% ratio of residents who choose public transport ranks first in the world. Bus companies here are controlled by grand real estate developers. For instance, The Kowloon Motor Bus Co. (1933) Ltd. (abbr. KMB) is held by Sun Hung Kai Properties. New World First Bus Services Limited and CityBus Limited are getting command of New World Development [1]. But for Hong Kong's railway, the government is the strongest stockholder. The government connected the railway and metro with the estate and magnificent buildings [10]. To sum up, the right to operate buses is in properties and other powerful enterprises and the right for the subway is held by the government, it forms a benign competition and cooperation, avoiding some monopoly problems to some extent. The final beneficiary is citizens.

#### **4.3.1. Ways of Saving Daily Cost and Attracting People**

It could be a wise way to customize routes from assembled employee's residences to their workplace. Leaders in public transport company can aim at that factory which doesn't have factory buses to market the company's services. It's a profitable negotiation because other enterprises eager to transfer

more people every round in order to make sure their costs are full used. Public transport companies could adopt the interest-based negotiating skills the author mentioned above to deal with it. Besides, not only for enterprises, but also negotiate with bank to establish more ways for passengers to accomplish payment. The convenience of pay raises citizens' willing. Apart from exterior factors, there are also skillfully deducting interior costs. Some companies emerge the problem that they have too much management power. Wages given to these management power even exceed that to basic-level employees. Regroup the management can take into consideration if they need.

#### **4.3.2.Competition and Collaboration of Metro and Bus**

Another point to the public system is competition between the metro and bus. People prefer the metro for its rapid, efficiency, convenience and so on. The bus company lost much passenger flow after the metro starts. Many places are in controversial because they declined the bus route, which is similar to the metro way causing people difficulty of going out. The research group collected the statistics from the POS machine on Route 11 bus. General passenger flow decreased by 60.6% after the metro opened, but that of elder people just decreased by 38.9%, which illustrates that elder people depend more on regular buses. Considering seniors have difficulty on receiving information, it's crucial to know elder people's exact demands when optimizing the public transport system [11]. Some cities in Germany generally do not exceed the distance of 3 to 4 radius of metro station's service when optimizing. The transportation committee in Bangkok, Thailand suggested a bus route which parallels the metro line at most 4 kilometers [11]. Bus and metro are better at being collaborative but not distributive. Some bus routes really similar to the metro can be changed into subway connection buses, it shortens the length and save cost and beneficial to cut down the waste of labor. If cooperate indirectly, bus companies eager to save expenses further, they can adjust other existing routes if suited.

### **5. Conclusion**

This study found that public transport should deal with three levels respectively: negotiate with superiors, managing their own company's structure and serving citizens with their sincerity. Initially, the paper discovered that negotiating with superiors like governments is similar to the relationship between seller and buyer. These cases also fit the terms in commerce: distributive negotiate and interest-based negotiation. Under most circumstances, interest-based negotiation creates a breezy atmosphere and is more likely to make a bargain, stimulating long-term cooperation. In addition, companies always have many competitive suppliers or sponsors. Purchasers and cooperators are more possible to choose suppliers whose attitude is kind. Distributive negotiation should combine both interests first and can consider outsourcing at the proper time. What's more, managing structure in the company mainly contains hierarchical and matrix. Matrix one has a tendency that assimilates great ideas from everyone in the company, but hierarchical ones present the conventional status in which leaders controlled the power and everyone has their stationary duty. Matrix structure came into use in much modern companies that always finish a task by a floating group, the manager chooses people who specialized in this kind's assignment to make it better. A hierarchical structure is fitter in the conventional company which has a centralization of authority like a government bureau. This structure can forcefully supervise employees and harmonize the company generating a steady order. When a company is operating, financing is a favorable way to earn much, or negotiate with an estate corporation to join them and get stock etc. For the public, it's also vital to raise citizens' willingness to take public transport. Apart from improving their serving capacity and attitude, saving costs and coordinating the relationship with a subsidiary corporations like metro companies and bus companies.

The public transport companies should change their mind that subways, buses, and public bicycles compete with each other to these kinds of public transport collaborate with each other.

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