Comprehensive Review of Airport Business Models

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I. **Introduction**

As a linkage between local industries and residents to new markets, products, customers, friends and relatives around the world, airports have been a critical component of a region’s trade and commerce with the rest of the world. However, due to different types of ownership, performance of airports varies in terms of many different aspects, e.g. customer service and contribution to the economy and is often subject to much public scrutiny.

Traditionally, many airports around the world are owned and operated by the local or national government. Today, despite decades of privatization of state enterprises, almost 50% percent of the airports in the world are still in the hands of government. On the other hand, since the privatization of the three airports in London and four other major airports in UK and the forming of British Airport Authority (BAA plc) in 1987, many countries have introduced private sector involvement with different degrees of private ownership and management, from 100% private stake and operations of the whole airport to subcontracting of management of part of the airport. Nevertheless, there is no one single model that fits all situations in all countries. The choice of model depends very much on the specific circumstances of the airport. This paper aims to analyze the merits and disadvantages of the common airport business models and attempts to identify the factors to be considered when choosing a model for an airport.

II. **Brief Analysis of Common Business Models for Airports**

**Government Owned and Operated**

This traditional form of business model whereby the airport is entirely owned and operated by the local or national government is still very common today, especially in Asia-Pacific, Africa and Latin America. Under this business model, the airport is operated directly by a government department, typically the Civil Aviation Authority (CAA), Ministry of Transport or in a few cases, the military. The reason for insisting in this type of traditional model is often related to the emphasis on the role as a part of the administration played by the airport. Attitudes towards these governments owned and operated airports are that of a public utility with public service obligations. Consequently commercial and financial management practices are not given top priority. Also, there is the other reason for using this model in terms of considering the strategic importance of the airport in national defense, as it may be expropriated for military use. Besides, there are other three reasons why some airports remain under this model: Firstly, “anybody who wanted to buy the airports would have to borrow heavily,” and the 1980s demonstrated the dangers of such leveraged buyouts. Secondly the required debt service payments would make it difficult for a private operator to invest in airport maintenance and improvements. And thirdly, a private operator may not be able to manage the multitude of legal, community and intra-governmental issues that arise in airport management.

A. **Pros:**

- Because of the need to meet multiple objectives, the government department operating the airport does not necessarily operate the facility on a commercial basis. The airport may pursue not only commercial but also political or social objectives such as employment creation, safety and security guarantee.
- The airport often receives subsidies in order to pursue social objectives.
- The airport is often endowed with certain privileges. Such privileges may include exclusive right to provide certain services or even exemptions from certain laws or regulations.
- The airport is more likely to inherit the dominant position from their monopoly power in the area.
B. **Cons:**
- The objectives given to the managers of government owned airports are vaguely defined, and tend to change as the political situation and relative strengths of different interest groups change.
- The large mismatch between management’s incentives and the interest of the owner (government) increases inefficiency.
- Never ending call for increasing amounts of investment which will produce the heavy burden on taxpayers.
- Poorly customer service-oriented.

**PPP (Public Private Partnership) Model**

A. **Salient Features:**
A PPP is broadly defined as “a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.” However, in practice, few people can figure out the difference between PPP and privatization since the most common type of these two models heavily emphasize on the participation of private sector in similar forms. Unlike privatization that requires the transfer of ownership, a PPP entails the private party taking substantial risk for financing a project's capital and operating costs, e.g. designing and building a facility, and managing its operations to specified standards, normally over a significant long period of time. In a PPP, the land typically belongs to the public institution, not to the private party, and the fixed assets developed in terms of the PPP are thus state property. Privatization entails the sale/disposal of state property and functions - including all the assets and liabilities associated with that property and functions. Moreover, the PPP subsumes all the objectives of the service being provided earlier by the government, and is not intended to compromise on them. So the key differences between public-private-partnership and ‘privatization’ maybe summarized as follows:

- **Responsibility:** Under privatization the responsibility for delivery and funding a particular service rests with the private sector. PPP, on the other hand, involves full retention of responsibility by the government for providing the service.

- **Ownership:** While ownership rights under privatization are sold to the private sector along with associated benefits and costs, PPP may continue to retain the legal ownership of assets by the public sector.

- **Nature of Service:** While the nature and scope of services under privatization is determined by the private provider, under PPP the nature and scope of service is contractually determined between the two parties.

- **Risk and Reward:** Under privatization all the risks inherent in the business rest with the private sector. Under PPP, risks and rewards are shared between the governments (public) and the private sector.

B. **Pros and Cons:**

a. **The potential benefits of PPP:**
- Cost-effectiveness - since the developer/service provider is competitively selected, the operations are generally more cost effective than before.
- Higher Productivity - by linking payments to performance, productivity gains may be expected within the program/project.
- Accelerated Delivery – since the contracts generally have incentive and penalty clauses vis-a-vis implementation of capital projects/program, this leads to accelerated delivery of projects.
- Clear Customer Focus - the shift in focus from service inputs to outputs create the scope for innovation in service delivery and enhance customer satisfaction.

- Recovery of User Charges - Innovative decisions can be taken with greater flexibility on account of decentralization. Wherever possibilities of recovering user charges exist, these can be imposed in harmony with local conditions.

b. The basic disadvantages of public-private partnership model:

- PPP model prefers the economic aspects of the project to the social, environmental or other aspects
- Considerably negative financial impacts in the case the partnership has to be repudiated
- Possible transfer of risks from the private sector to the public sector, e.g. risk of bankruptcy
- Insufficient experience of the partners, particularly of the public sector while contracting out such projects, where we can notice an informational asymmetry operating in favor of private companies, which naturally use their endeavor and potential to negotiate better conditions for themselves
- From the macro-economic point of view, we can see a substantial disadvantage in the fact that as a consequence of the long-term character of PPP projects, the mandatory expenses grow and the hidden debt arises, and the debt will exist for many years, and thus it can affect negatively the fighting power of the future governments and burden significantly the future generations.

C. Industrial Practices: Going back to the airport industry, due to the different motives for private participation, various PPP models, especially when applied to specific airport facilities such as Passenger Terminals, Cargo Terminals, Runways, can be found, e.g. BOT, BOOT, BOOS, OT and BTO. Whatever the model is, the major objectives are to improve economic performance and the level of service by involving a highly experienced airport operator, fund infrastructure needs by private investments, find financial resources in order to fund other government projects / priorities, transfer airport project development risk to a private party and improve airport profitability. The following are some statistics on PPP model adopted in the airport industry in the last ten years, from which we can see the practices of this model used in the world:

(Figure 1: Number of and investment in PPP projects in the world - WB PPI Database)

(Figure 2: Number of and investment in PPP projects by type - WB PPI Database)
As mentioned above, the privatization of airports worldwide has become a fundamental feature of the aviation industry since 1987. However, the concept of privatization is quite complicated in practice. A simplistic view of privatization is that it involves only the transfer of ownership whereas in reality it also involves the transfer of control from the government to the private and commercial. Privatization can thus occur through the transfer of not only ownership but also management control from government to private groups.

A. **Pros:**
There were many reasons to privatize airports. These included increased ability for the airport to raise additional capital and seek new revenue sources from private markets, to improve efficiency, reduce costs, become more customer service oriented and increase competition among airlines to provide choice and cost reduction for passengers. In addition, the government could enjoy revenues from the sale of its assets and could also collect taxes from the new private entity. The landside services, in particular, are those normally offered by private firms away from airports and their operations can easily be moved out from under government control.

B. **Cons:**
Regardless of its potential benefits, privatization also involves risks which are considered as disadvantages and these mainly arise from airside services. Because many citizens in general see the airport as part of a city’s or region’s essential infrastructure and also because airports are often regarded as important catalysts for local economic growth, the public at large believe that the government should play an active role in developing and supervising airports. Moreover, because airside services are natural monopolies, the public often feel more comfortable and protected by keeping the government involved in airport regulation and supervision. In addition, many feel that the governments have to be involved in ensuring safety and quality of service standards because of the inherent nature of air travel. Not only the public, but also airlines themselves are generally concerned about privatization. They expect that without government involvement, privatization would bring higher landing fees and user charges, which would eventually translate into higher ticket prices for their customers.

III. **Empirical Experience in the World**

Business Models in US

In the US, (Almost all) airports are government owned (locally) but effectively privately operated, with a high degree of contracting out. Together with the introduction of the Airport Privatization Pilot Program, the most typical owners of airports in the US are municipal governments, followed by multipurpose port authorities and state governments. Airport authorities generally have a more
autonomous governance structure that helps insulate management from local politics and gives them control over salary, procurement, and budgeting systems, resembling the private sector more than local governments.

As to the governance and management system, Beginning in 1978, airline deregulation in the US acted as a worldwide catalyst of change in the philosophy of how airlines and airports are owned and managed. Compared to other countries, airlines in the US are much more actively involved in the governance of airports. Long term leases signed between airports and airlines give the airport/Port authorities in many cases exclusive control of the entire passenger terminal or concourse and the right to approve or veto capital spending plans. This type of arrangement made the “signatory airlines” joint ventures with the airport. For taking this risk, the incumbent airlines were able to control airport expansion and to some degree the ability of competitors to enter some markets. Besides, the involvement of private sector penetrates all managerial levels of airport, including operational, project, and strategic management.

<table>
<thead>
<tr>
<th>Elements of Control</th>
<th>Typical Status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning for expansion</td>
<td>Government/Private</td>
<td>Government leads but private interests shape by their willingness to provide financing or to accept plans under majority-in-interest clauses in leases.</td>
</tr>
<tr>
<td>Design of projects</td>
<td>Largely Private</td>
<td>Airlines and users have significant, often decisive control over design. Private consultants typically execute designs.</td>
</tr>
<tr>
<td>Financing</td>
<td>Largely Private</td>
<td>Mix of public (mostly federal) and private sources, with a significant fraction of money coming from bonds raised in capital markets.</td>
</tr>
<tr>
<td>Operation of facilities</td>
<td>Largely Private</td>
<td>Operation of facilities largely done by airlines and other third parties.</td>
</tr>
<tr>
<td>Pricing of services</td>
<td>Government/Private</td>
<td>Set in negotiation with major users and subject to legal controls on increases.</td>
</tr>
<tr>
<td>Availability of services</td>
<td>Government/Private</td>
<td>Principle of open access to all qualified users generally holds, subject to airlines and other third parties controlling the use of their facilities.</td>
</tr>
<tr>
<td>Ownership of properties</td>
<td>Government</td>
<td>Municipal or regional agencies.</td>
</tr>
</tbody>
</table>

(Table 1: Level of Privatization for Major Commercial U.S Airports)

**Business Models in Europe**

Although BAA was the first fully privatized airport system in the world and this has been a model studied and adopted by many jurisdictions inside and beyond the EU, it is not surprising that many airports in Europe are still owned by a the government, be it at the national, state or local level since airports are traditionally seen as 'public assets' suitable for promoting economic development, such as the airports in Luxemburg, Greece and etc. However, along with two distinct features from airports elsewhere in the world as an enormous number of airports and easily connecting with and compete with a well-developed rail system, EU has been the pioneer in airport privatization with a strong customer focus.

**Named as the model of fully or partially private for-profit with government/private controlling interest**, privatized airports in EU may be listed on the stock exchange with or without a majority shareholder. Some of them might be sold to a strategic investor, other airport operators or financial institutions. Very often full privatization is restricted as the former public owners want to secure certain political interests to be guaranteed by a golden share or a wide ownership clause. Currently at most
airports the private owner has only a minority stake either in the form of a stake of up to 49% signaling private public partnership in roughly equal terms or in form of a minority of less that 25%. Only the airports of Bratislava, Brussels, Copenhagen, Malta, Vienna (50 % plus 10% employee foundation) are privately owned by a majority share. No major airport in Continental Europe has been fully privatized without any ownership restrictions. So the typical private airport in Europe is not a fully but a partial privatized airport. Such an airport has a wider range of motives like regional development, job creation than only profit maximizing.

Parallel to the privatization process public European airports have changed their governance structure as well. In this respect Europe is certainly different since within the same liberalized aviation market the provision of airport services are governed by different airport models sometimes even within a member state. However, most airports are operated by a public corporation. This format vertically separates the airport system by disconnecting operations from regulatory functions. The Department of Transport retains direct responsibility for the establishment and enforcement of regulations for airports but operations are assigned to a state owned corporation, avoiding conflict of interest. Although the corporation will report to the Department of Transport, it has a degree of independence due to its corporate structure. While a departmental operation requires that all airport expenditures must go through the annual government budget review process, a government corporation has some independence in its financial planning. In some cases the government corporation has the ability to issue bonds to finance major projects, removing it somewhat from the vagaries of the federal budgeting and political process. A number of examples of airport management by Government Corporation exist, one of which is Aeroports de Paris (ADP). In this case, the French national government has determined that the two major airports in Paris are of national importance and operates them via ADP. (Other French airports are managed locally.) While some airport corporations are wholly owned by the national government, others are jointly owned by federal and local governments (e.g., Germany, the Netherlands).

<table>
<thead>
<tr>
<th>All airports</th>
<th>Number of Airports</th>
<th>Number of Public Owned Airports</th>
<th>Number of Mixed Owned Airports</th>
<th>Number of Private Owned Airports</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-27 airports</td>
<td>306</td>
<td>237</td>
<td>43</td>
<td>26</td>
</tr>
<tr>
<td>Non-EU airports</td>
<td>98</td>
<td>80</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

(Table 2: Ownership of Airport Operators in EU-ACI report)

- **Business Models in the Australia**

Most of the medium-sized to large airports in Australia are privately owned and most of the smaller airports are owned by local governments. Most of the major airports in Australia have three to five main shareholders, in some cases one of these shareholders is a foreign airport operator (BAA for Melbourne, Schiphol for Brisbane). Financial institutions, such as banks, pension funds and infrastructure investment trusts, are on most airports’ share registers. In some cases, construction or property companies have a shareholding. State or local governments can have significant shareholdings, directly or indirectly. For example, the Brisbane Port Corporation, a state owned enterprise, owns more than a third of Brisbane airport. Christchurch airport is majority owned, and Wellington airport partly owned, by local government. With one exception, the larger airports in Australia do not have majority owners.

Regarding to the governance and management control, named as a model of partially private for-profit with private controlling interest, major privatized airports are subject to light handed regulation by
means of Australian federal government entering into long term, 50 year, leases with consortia of private businesses along with the performance under monitoring. Thus this environment has given the airports considerable flexibility in daily operations. And the government cedes control over the day-to-day operations to the commercial enterprises, while clearly maintaining control over what kinds of long-term facilities and changes to the airport can be made, which is quite unlike their UK counterparts who seems to have taken a more short-term investment perspective immediately following the sale.

<table>
<thead>
<tr>
<th></th>
<th>Local/regional Government Share?</th>
<th>Airport Operator Share?</th>
<th>Majority Owner?</th>
<th>Listed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide</td>
<td>No</td>
<td>AAL (privately owned Adelaide Airport Limited whose shareholders include a number of Australian superannuation funds)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Brisbane</td>
<td>Yes</td>
<td>Schiphol AMS</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Melbourne</td>
<td>No</td>
<td>APAC (Australia Pacific Airports Corporation)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Perth</td>
<td>No</td>
<td>WAC (Westralia Airports Corporation Pty Ltd)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sydney</td>
<td>No</td>
<td>MAp</td>
<td>MAp</td>
<td>No</td>
</tr>
<tr>
<td>Cairns</td>
<td>No</td>
<td>No</td>
<td>IIF (Cairns Mackay Investment Ltd)</td>
<td>No</td>
</tr>
</tbody>
</table>

(Table 3: Ownership Patterns in Australian Airports-Airport Annual Reports and Websites)

IV. **Situation in the Mainland of China**

Few would question the important role that the airport industry in China has played in the development of the booming economy in the past decade. It does not only provide essential infrastructure to the air transportation system but the employment it created has produced significant multiplier effects on the national and regional economies. Ownership of most airports in China has been transferred from the Central Government to local authorities in the last few years. The most profitable ones have been partially privatized and listed in the stock market, e.g. Shanghai and Beijing airports. However they are still majority owned by the government and, unlike their counter-parts in other countries, are still highly subject to government intervention in daily operations and management, in addition to regulatory requirements.

- **Types of Privatization**
  - **Foreign investment**

  After the implementation of localization program focusing on the ownership transferring from the Central Government to local authorities, CAAC further allowed the foreign investors to take equity stakes in the airports. For example, in April 2005 the Airport Authority Hong Kong (AAHK) agreed to invest 1.99 billion Yuan for a stake of 35% in Hangzhou Xiao Shan International Airport (ranked No. 9 among Chinese airports by the number of passengers handled). The Hangzhou investment is AAHK’s first major investment outside of Hong Kong as it seeks to cash in on the rapidly growing China aviation market. It was followed by the set-up of a joint venture between Hong Kong and Zhuhai airports, in which AAHK invested 198 million Yuan for a 55% of the joint venture. After AAHK’s investment in Hangzhou airport, airports in Ningbo, Nanjing, Chengdu and Kunming are reportedly
negotiating with foreign investors on stake sales. German airport operator Fraport AG (which manages Frankfurt Airport) has signed an agreement to buy 25% of Ningbo Lishe International Airport.

B. **Public Listed Company**
The extent of airport privatization is relatively limited compared to that in other countries, especially in Europe. The most common process of privatization in China is to issue shares in the stock market to introduce private capital to support expansion and upgrade of airport facilities. In most cases the local government remains a majority shareholder and in control of the board of the airport company. Over the last few years, 6 airports in China, i.e. Shenzhen, Shanghai, Xiamen, Hainan, Beijing and Guangzhou, have been listed in the stock market.

C. **PPP**
In contrast to the core business of passenger terminal management and aircraft handling (the aeronautical part of aviation), the government has always been more receptive to opening the market of non-core aviation business (non-aeronautical) to private operators, which is considered less essential, such as retail in passenger terminal and ground handling services. For that reason, airport assets and property are usually managed by the airport company, which is 100% or majority owned by the government while the non-aeronautical part of business is now often contracted out to private companies. In China, due to the lack of a legal framework in the management of concessions, the major types of PPP model in commercial activities usually involve short-term sub-contracting of services and mid-term leasing. For example, at Shanghai International Airport, the retail spaces are leased out to private operators and their performance is reviewed regularly. The maintenance of terminal facilities is contracted out. Shanghai International Airport has also established a joint-venture company with Frankfurt Airport to provide training to airport employees. These are examples of attempts by the government to partially privatize the operations and maintenance of the airport and they convey the signal that the government is continuing its effort in developing a market economy. This is also the first step in the process of granting more autonomy to state-owned enterprises.

D. **The Emergence of Airport Corporations**
The government has allowed mergers and acquisitions between airports in the last few years which have produced several big airport corporations in China to achieve the scale of economy and synergy to improve management and financial strength. Although the sizes of airport corporations in China are still relatively small compared with the other airports operators in the world, such as BAA, the creation of airport corporations managing more than one airport signifies the Chinese government’s effort in promoting operational autonomy and a strategy to achieve balanced developments between regions. The Capital Airport Holding (CAH) can be considered a success story of airport mergers and acquisitions in the Chinese airport industry. At the end of 2008, it was holding stakes worth 67 billion CNY in more than 30 airports in China located in many parts of the country.

- **The Pros and Cons of Chinese Airport Privatization**

**A. The Benefits of Airports Privatization in China**
Unquestionably the privatization of the airport industry in China has driven airports to operate in a more commercial manner to allow them to respond quicker to market demand. It has had a positive and profound impact on the design, planning, financing and management of airports. Also as a result, passengers today experience much better customer service than before. They are provided with better managed and designed facilities.
a. **Financing tools**

Currently out of the some 179 airports in China, 54 of them are undergoing expansion and upgrades at the moment or in the near future. However only the most profitable airports can raise the funds they need to finance these expansions from the private capital market. Only a few of the other airports in the country are interesting to private investors despite local authorities’ drive to privatize them. Meanwhile, airports listed in the stock market are moving ahead fast in corporatization and improving corporate governance in order to attract investors. These investments may come from interested airlines based at the airport or other state-owned enterprises. Privatization becomes a hallmark of financing capability, which is related closely to profitability. It has also been seen by certain local governments as a source of revenue to cover or reduce budgetary deficits. Meanwhile, profit making airports can be a regular source of revenue to the government. In the past five years, capital expenditures at airports amounted to 12 billion RMB per year, which would have been impossible if they were to be entirely funded by the public. It can be said that privatization has relieved draining government coffers while providing the capital needed for expansion of infrastructure.

![Private Ownership in Select PRC Airports](image)

(Figure 4)

b. **Intensified Competition**

The privatization of airports has introduced competition to the industry and mostly in the non-aeronautical side of it, e.g. retail in the airport terminal. Airport operators are now paying more attention to the development of non-aeronautical business to improve their bottom lines, especially in the face of the present difficult economic situation. The competition between private operators of retail businesses has improved the quality and efficiency of services provided, which is a key element of passengers’ experience at the airport and is playing an increasingly important role. Retail operator performance is assessed annually based on passenger opinion survey and the worst performing ones will not have their contract renewed. Thus not only the general level of service in the airport but also the satisfaction from consumers can be raised by the competition introduced by the PPP model.

c. **Custom Service Improvement and Efficiency Increased**

As a service industry, apart from the primary objective of providing a safe and secure operating environment, the airport should also supply the efficient and economical service to airlines, passengers and other users with the aim of maximizing profits. So the ownership and management structure of the airport is considered as a means to achieve this end. Before privatization, the pressure of budgetary control often resulted in the lack of infrastructural development, while the service quality and efficiency was compromised by the interventions from the government. It has not changed until the emergence of privatization breaks down the traditional bureaucracy of regulation setting and activities control. With the aim of profit maximization, different from the public sector, the private partnerships
pay more attention to the custom service improvement. Realizing the importance the customers, they
tend to improve the infrastructure, optimize the process and introduce scientific methods of
management. Also as competition intensifies and globalization of the airport industry continues,
service improvement and efficiency enhancement will be a key element in the marketing plan of every
airport. Actually, as to the latest ranking of ASQ (airport service quality) executed by Airport Council
International, the performances of Chinese mainland airports have made significant improvements.

B. Problem Analysis

a. Separation of Operation and Regulation Due To the Problem of Ownership

According to a study on the impact on efficiency of privatization through public listing, the listed
airports’ productivity performance is not improving much after their IPOs. On the other hand, the
performance of non-listed airports in China has improved more than that of the listed airports. A main
reason for the unsatisfactory post-listing performance may have to do with the fact that the government
still maintains the majority and dominant shareholding of all the listed airports, i.e., these are only
partial privatizations.

One can describe the present status of privatization of airports in China as “superficial”. Despite the
transfer of ownership, changes have only taken place in the “form” rather than the “substance” because
very often the local government still holds a majority share of the company and basically makes every
major decision. The assets of the father (central government) of state owned enterprises (SOEs) in civil
aviation have been inherited by the son (local authorities). So from the view of enterprises, the
autonomy of operation is still limited by the intervention from local government, while regulation is
done by CAAC (China Civil Aviation Administration). This separation of operations and regulation
does not only caused conflicts between local and central governments due to different interests, but
also damages the interests of private partners who are concerned about continuity of policies that would
support the development of the airport. Besides, as for the strategic management of the airport, it is
often based on politics rather than operational requirements, which is very typical in the public sector.
However autonomy can be achieved at lower levels of management, such as the daily operations and
maintenance of facilities.

On the other hand, it is often difficult for private investors to understand the complicated ownership
and organization structure of airports, which varies from one to another before they can evaluate the
opportunities and make a decision as to how they would buy a stake in the company. For example the
ownership structure of Haikou International Airport Ltd changed significantly during a short period of
one year as illustrated in the following chart which caused much confusion and an uneasy feeling of
uncertainty amongst private investors.

(Figure 5)
b. **Regulatory Regime Lags Behind the Pace of Privatization and Reform**

The process of privatization of some airports in China took about a decade which is not atypical when compared to other airports in the world because private investors need to understand the financial status of the business that is being proposed as an investment. But in China, without a proper regulatory framework to ensure the transparency in the management of publicly listed companies, investors are often not provided with the full picture of the status of operations and finance of the companies in which they hold a stake. Furthermore this lack of information can result in unfair competition and potentially corruption. Also, CAAC still has not decided on the policies of concession management and user charges setting, which should have been finalized before privatization. Meanwhile, the regulatory role played by CAAC is not an independent body. The cross interest driven behind the different two roles like as regulator and law enforcement officer makes the government hardly be independent on the policy-making.

c. **The Problem of Balancing Infrastructural Development**

Although a strong economy is driving the rapid growth of air traffic in China, the air travel market is unevenly developed. Air traffic volumes are concentrated on areas where the economy is better developed, e.g. Beijing and Shanghai. Compared with these areas, airports in smaller cities are losing money. They are required to provide the infrastructure to the local community. The problem that local authorities are faced with is to avoid the over-development of airports in these areas. Over the past few years, almost 50 percent of airports in China have made plans to expand without a thorough capacity analysis. Actually, as an industry of high capital investment, medium and low profits, and high cost of withdrawal from market, the government should be cautious about appraisal of capital investment with due consideration for all concerned. Unfortunately, most of former and present projects were not properly planned and there was a lack of consideration to balance national economic development as a whole. Also local authorities always take airports expansion as an easy way of introducing foreign investment and boosting the local economy. As a result many airports have been in the red since they were opened, the best example being Zhuhai airport in Southern China which was designed for 10 million passengers a year but for years it was receiving less than 1 million passengers per annum. In 2007, the revenues of all airports in China reached 3.1 billion CNY. However, only the largest ones were making money. Seventy-five percent of them were in red, especially the small ones which handled less than one million passengers per year.

Even in the Yangtze Delta Economic Region, one of the economically most developed regions of China, the lack of cooperation or even the existence of competition between municipal governments has led to a high concentration of airports in each other’s proximity, causing unnecessary waste in resources. Although privatization of public sector industries is a key driver to improving efficiency, public interests should take priority over in its implementation. Also together with urban expansion and development, transport infrastructure should be carefully planned and developed in a balanced manner.

V. **Recommendations and Conclusion**

As a Chinese proverb said “Do not cut the feet to fit the shoes”, one size does not fit all. Airports should adopt business models based on their goals, objectives, opportunities, strategic priorities and challenges facing them. Thus no one single universal model that is applicable to all airports. Each situation should be evaluated on its own merits.
Since every type has its own pros and cons, the following questions would help determine the selection of business model:

a. What is the goal the airport trying to achieve (e.g., capacity expansion, better management, high efficiency and productivity, cost reduction, enhanced revenues and etc.)?

b. What role and controls does the owner of airport want to play and retain?

c. What are the net costs, benefits and impediments if the private sector is introduced to the airport in both ownership sharing and operations management (e.g., financial, regulatory, management, organizational)?

d. What are the realistic privatization options to achieve the goals if the privatization is predominant business model?

e. Which option might work best considering the unique circumstance?

f. How to balance the interests between public and private

g. Is there a sound regulated environment with full supporting policies or measures that can reduce the potential risk of operations based on full risk assessment?

At the technical level, considerations for choosing business model are highly related to the physical characteristics of the airports as follows, since not all airports could be adapted to be partially or fully privatized and should be strictly under the protection of government.

a. Local economy development and maturity of the industry

b. Airport’s market power with virtue monopolies

c. Size of the airport represented by the volume of passenger traffic per year

d. Regime of user charges

e. Available sources of revenue

f. Capacity and site expandability

g. Competitive situation

h. The number of airport’s users

Also even in the implementation of business model, the desirable degree of government involvement in airport industries shall be adjusted according to the change of situation and is a question that needs to be revisited from time to time.

As mentioned before in this paper, business models in the airport industry may differ and experience in other countries may not be applicable. The fundamental question in the process of daily operations of the airports appears to be how the government should exercise its control to protect public interests and get the full play of the value of resources.
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