COMPREHENSIVE REVIEW OF AIRPORT BUSINESS MODELS

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0. Abstract

Initially, airports were public and state owned, but they had undergone changes since 1970’s and 1980’s, when the privatization swept the airport industry. From then on, separation of ownerships and management rights became a major managerial model for airports.

Different mix of ownerships and management rights may result in diverse business models. Although each model may have pros and cons, the model of privatization is relatively more conducive to enhancing operation efficiency and profitability for airports.

Subject to many factors as they are, the business models of collectivization, modularization, multiplication and specialization are more preferred thus proposed by us. However, it is still compulsory to bring in market competition mechanism and proper surveillance from governments whatever particular model is eventually chosen.

1. Introduction

In tradition, all airports are public or state owned. This is fully reflected in major European cities as Paris, London, Dublin, Stockholm, Copenhagen and Madrid, and airports in other cities like Tokyo, Singapore, Bangkok and Sydney are quite much the same. Besides, some other airports, for instance the Amsterdam Airport, whose 76% shares are taken by Netherlands Government, plus 22% and 2% shares by Amsterdam and Rotterdam Municipality respectively, are jointly owned by state and local government. Typically another, Basel Mulhouse Airport, located along boundaries of France and Swiss, is shared by the two nations.

Since 1970’s and 1980’s, USA and some other areas had been leading the process of Air Transport Liberalization. The deregulation oriented to airlines led to a booming demand and airport traffic congestion, which consequently aroused airports’ voice for expansion and operation efficiency enhancement. It played a role to catalyze the reform of airport business models. Since then the quantity of the partial and complete privatized airports was evidently increasing. In spite of that, in USA and other developed European countries, privatized airports were small sized, open only for general aviation and aviation clubs. Therefore, the model of state and municipality ownership was still then. Nevertheless, each state or municipality has its own operational and managerial philosophy for airports, hence the airports independence differs.

Virtually, airports’ choice on business model is pretty much dependent on national conditions and governments’ policies. Also, it is much relevant to state systems and administration solutions, as well experience of others. According to the lately mix trend of ownerships and management rights, airports business models may primarily fall into two categories. The first one is state or public owned, which remains a major organization form in world, and the other is private owned whose significance keeps growing nowadays.

2. Overall Assessment of Existing Airport Business Models

As the organizational and economical entities, airports have to provide interpretation for their ownership and business models. As the business models are increasingly attaching more importance to airports independent management (usually carried out by airport authority or an entity resembling an independent enterprise) and the ownership involvement of private investors, airports have undergone changes and operation complexity that lead to business models difference from the traditional.
2.1 Airports Owner and Managers

Each airport has its solution to allocate its ownership and management right. Usually, state governments and regional/local governments, as the real airport owners, is authorized to grant management permits, reserve crucial privileges and conduct surveillance or management. However, the granted airport managers are more like owners and decision makers, rather than managers only.

Traceable to that, the shareholders of airport managers are tacitly recognized as the owners, and they may consist of governments, private entities and mix of the two. To take closer look, airports owners may include state governments, regional/local governments, corporate entities, private investors or any mix of the above. Particularly in the condition of mix of government and private ownership, a major conflict lies in if the interests of the majority are associated with the governments or the private entities.

Similar to that, airport managers may comprise any kind of entity such as ministries of state governments, departments of municipalities, airport authorities or entities resembling that, as well as airports management contractors.

On that account, state or private owned corporations can be identified as airport managers with their professional expertise and experience in airports management. By providing such professional service to others, they charge some commission, which perhaps is a fixed part of airports revenue or some other financial incentives. As airport management is turning more professional and complex, the business model is quite common and popular in worldwide. Even more, the airport managers may partially or completely subcontract management rights to others, and this is fully demonstrated in US airports that commonly outsource the operation and development rights to contractors.

2.2 Airport Business Model

Although a trend of airports privatization is turning up, the airport industry is yet to catch up with others. In most countries, governments prefer partial privatized model, rather than the complete privatized one. For instance, airports remains public or state owned in North America though the privatization stands a long time in history in infrastructure and transport industry there. Similarly, Canadian airports are also restructured to non-profit organizations instead of the privatized ones. Further, Britain is the most radical one to push the privatization process, followed by Australia and New Zealand in sequence, which have realized the complete privatization already. However, most European countries are inclined to partial privatized model except Britain and consequently governments hold more shares in most cases. Generally speaking, there are 6 categories regarding airport business models. According to differences on privatization process and operational organizations, airport business models may fall into 6 categories.

2.2.1 Model of State Owned (Central or Federal Government Owned)

Assuming that airports are complete state owned, then 3 business models arise.

(1) Direct Operation and Management by Government

This is the most common business model in the world, particularly in secondary airports outside USA and airports in developing countries. In this case, organizations subordinate to air transport administrations or directly under national Ministries of Transport may be in charge of airports operation and management, and designated government officials are usually assigned then to accomplish the duties. In fact, airports of Athens, Bombay, Cairo, Dubai, Helsinki, Moscow, Jeddah, Oslo, Singapore and Stockholm are doing well in management and operation with the said model before 2000. However, there are minority of countries that establish a Ministry or cabin-leveled organizations to take care of airport affairs.
Under circumstance of that business model, airports are commonly entangled with low efficiency, aging equipments and poor economical performance, which turn out to rely on a substantial government subsidy to break even. Taking Britain for instance, airports in northern highland and island district are under direct administration of Ministry of Transport. Although they suffer a deficit due to the remote location and poor traffic volume, they survive on government subsidy for that they are much needed by populous. The phenomenon that airport deficit is subsidized by air transport administration can be traceable to many factors, among which are primary the combination of enterprise management with government, the stiffness of managerial mechanism, overstaffing in organization and financial mismanagement. As a consequence, many countries are considering replacing the models.

As for Mainland China, Gongga Airport in Tibet, undergoing a localized reform in 2003, is still under the direct administration of Civil Aviation Administration of China (CAAC) and yet to realize the separation of the enterprise management from the government.

(2) Operation on Basis of Independent Non-Profit Organizations

Currently, the model is exclusively applied by Canadian airports. Canadian major airports are managed by local airport administrations. Because airport land is still government owned, the airport administrations have to pay the rent each year plus a surcharge of 12% of airports’ overall revenue once the airport revenue exceeds 2.5 million Canadian dollars. Nevertheless, the Canadian non-profit-oriented airports save themselves from surveillance and supervision of the government on aeronautical charges; hence they managed to carry out substantial systematic expansions in the past 20 years, though the expansions were criticized as costly lavish, unnecessary and accountable for the increase of airport charges by a large scale.

In addition, Canadian airports take the passenger facility charge as primary revenue to cover airport investments rather than the non-aeronautical revenue, although they put concerns to non-aeronautical revenue to some degree.

(3) Corporation Management

This is essentially the state owned model. Namely, airports ownership is gripped by states while airports managers operate and manage on a commercial basis. In Japan, Narita Airport, Haneda Airport and Kansai Airport are primarily invested by the Japan Ministry of Transport, and they are jointly managed by the Ministry of Transport and the Japanese international airport authorities. Neither similar to managerial organizations of the government nor to private enterprises, Japanese airport authorities, a commission of airport management and execution, are independent productive economical entities owned by the state or public organizations. Also, it is the same with others like Dublin Airport, Madrid Airport and Aéroports de Paris (ADP) in Europe.

Under that business model, airports are recognized as enterprises and have much decision making powers and financial rights. As a consequence, they are capable to taking more flexible measures to airports operation. The model aims to the separation of the enterprise management from governments so as to improve the operation mechanism and economical efficiency of airports.

In terms of Mainland China, the model of central government owned but commercially run by corporations is primarily represented by Capital Airport Holdings Company (CAH), which has exclusively invested or entrust 39 airports in domestic and abroad, such as Beijing Capital International Airport (BCIA), Tianjin Binhai International Airport (TBLA), Chongqing Jiangbei International Airport (CQA), etc.

2.2.2 Model of Local Government Owned

It is a popular model in developed countries like USA, Britain, France, etc. As for China, some airports come to the
Commonly, airports of the model are invested by local governments. Their construction techniques must benchmark with the national criteria, and both the ownerships and management rights are usually held by local governments so that they have to make their own management decisions and take full responsibility for the profit and loss. The model well demonstrates an interest that parties whichever invest on airports construction shall take the responsibility for the management and benefit from it only if airports operate at a profit. From the stance of central governments, the model is much conducive to soundly coping with local governments, keeping a balance between the interest of local governments and national master planning and layout, and maintaining central governments as the macro-management authorities while preventing too many interventions to local governments from the central as well. Again, local government owned airports can be further classified into two business models. The one is operated by organizations subordinate to local governments, and the other is run by corporations.

(1) Operational Organizations Subordinate to Local Governments

It is most typical of US airports. Above all, USA positions its civil airports as public-benefited infrastructures. Because the airports construction is invested by the Federal Government or local governments, plus such local governments of states, municipalities or counties hold the airports management rights, the local governments consequently can offer the permit to airport authorities of public benefit nature to handle administrative affairs. Further, the administrative decision making authorities are subordinate to the Boards or airport management commissions, which primarily consist of local business groups and social associations. In some other countries, airport administrations are granted with rights on operation and management of more infrastructures, including but not limited to seaports, roads, bridges, etc.

Table 1 US Airports by Ownerships up until 1998

<table>
<thead>
<tr>
<th>Ownerships</th>
<th>US Airports</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open to Public</td>
<td>18,340</td>
<td>100%</td>
</tr>
<tr>
<td>Non-Open to Public</td>
<td>12,888</td>
<td>71%</td>
</tr>
<tr>
<td>Private Owned</td>
<td>1,161</td>
<td>22%</td>
</tr>
<tr>
<td>State/Public Owned</td>
<td>4,100</td>
<td>70%</td>
</tr>
</tbody>
</table>


(2) Corporation Management

Before the policy of reform and opening-up, Chinese airport industry was densely monopolized and closely combined to the central government. All the airports were shared by air force and civil aviation, thus no independent civil airport was available then. The situation had never been improved until late 1980’s when a market-oriented reform regarding independent operation among airlines, airports and civil air administrations was initiated. In 2003, another trend of airports localized reform that granted the ownerships and management rights from the central government to local governments was launched. Up until now, there are airports like Sichuan Airport, Guanxi Airport, Guangdong Baiyun Airport and Xinjiang Airport operating on a basis of corporation management while remaining themselves province or municipality owned.
2.2.3 Model of Multiple Local Governments Sharing

Besides the circumstance that a single local government holds the ownership of an airport, airport ownerships might be shared by multiple local governments. And it is well applied in Manchester Airport, whose 55% shares are held by Manchester Parliament, and the rest 45% are kept by 8 Parliaments of Municipalities nearby.

Airports of the above business model might tap fully of the multiple local governments to capture more air traffic market and propel airports development. In this circumstance, a united airport authority or company entity representing multiple local governments is certainly required for the airport organization, coordination and management.

2.2.4 Model of State and Local Governments Sharing

Besides the model of either state or local government owned, some airports can be jointly invested by both state and local governments, who consequently have the airport ownerships. For instance, Japanese major domestic airports and some international airports like Nagoya Airport and Haneda Airport are jointly invested by Japanese Ministry of Transport and local governments, and managed by local airport administrations. The following table demonstrates several specific European airports in the condition mentioned above.

<table>
<thead>
<tr>
<th>Airport</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>75.8% by Netherlands state government(central/federal), 21.8% by Amsterdum Municipality, 2.4% by Rotterdam Municipality</td>
</tr>
<tr>
<td>Berlin</td>
<td>26% by state (central/federal), 37% by State of Berlin, 37% by State of Brandenburg</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>26% by state (central/federal), 45% by State of Hessen, 29% by Berlin Municipality</td>
</tr>
<tr>
<td>Munich</td>
<td>26% by German state (central/federal), 51% by State of Bavaria, 23% by Munich Municipality</td>
</tr>
</tbody>
</table>

2.2.5 Model of Partial Privatization

Airport partial privatization denotes that state or local government transfers parts of airport ownerships to private entities, foreign founded enterprises and natural persons, or grant them the franchised rights to manage airports on a period basis.

This kind of airports stands the advantage to share the risk, responsibility and revenue with investors. It aims not only to gain investment from others to make a complement to national capitals so that the capital insufficiency may be relieved, but also to bring in the corporation management on a commercial basis so as to enhance the efficiency of airport operation.

(1) Transference of Partial Ownership (JV)

The privatization of most world airports is realized by starting up joint ventures through trading shares with external capitals. In the model of partial privatization, a sophisticated distribution for decision making powers shall be carefully fabricated, so as to balance and protect interests of both the public and the private.

It is manifested in the following table that most of the listed airports, such as Beijing Airport, Xiamen Airport, Pudong Airport, Haikou Meilan Airport, Shenzhen Airport and Baiyun Airport, are partial private owned.
Table 3  2001 Ownership Shares of Listed Airport Administrations

<table>
<thead>
<tr>
<th>Airport Administration</th>
<th>Ownership</th>
<th>Tradable Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican Southwest Group</td>
<td>15% by as the major investor Copenhagen Airport; 85% for trade in NYSE and Mexico Stock Exchange;</td>
<td>85%</td>
</tr>
<tr>
<td>( ASUR )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copenhagen ( CPH )</td>
<td>33.8% by Denmark State Government; 66.2% for trade in Copenhagen Stock Exchange;</td>
<td>66%</td>
</tr>
<tr>
<td>Auckland ( AIA )</td>
<td>25.8% by Auckland Empirical Study &amp; Research Commission, 9.6% by Manukau Municipality 7.1% by Singapore Changi Airport, 57.5% tradable in Stock Exchange of New Zealand and Australia;</td>
<td>58%</td>
</tr>
<tr>
<td>Vienna ( VIE )</td>
<td>20% by State of Lower Austria, 20% by Vienna Municipality, 10% Staff Fund, 50% tradable in Austria Stock Exchange;</td>
<td>50%</td>
</tr>
<tr>
<td>Frankfurt Main ( Fraport )</td>
<td>32.1% by State of Hessen, 20.5% by Frankfurt Municipality, 18.4% by German Federal Government, 29% tradable in Frankfurt Stock Exchange;</td>
<td>29%</td>
</tr>
<tr>
<td>Florence</td>
<td>19.3% by Florence Commerce Association; 17.2% by Florence Municipality, 10.5% by Prato Municipality, 14.3% by non-private investors, 28.8% for trade;</td>
<td>29%</td>
</tr>
<tr>
<td>Malaysia Airport Holdings</td>
<td>72% by non-private investors, 28% for trade;</td>
<td>28%</td>
</tr>
<tr>
<td>Zurich ( UZA )</td>
<td>55.7% by State of Zurich, 6.3% by Zurich Municipality, 10% by non-private investors, 28% for trade</td>
<td>28%</td>
</tr>
<tr>
<td>Guangzhou Baiyun</td>
<td>65% by Guangzhou Airports Holdings Co., 35% for public trade</td>
<td>35%</td>
</tr>
<tr>
<td>Haikou Meilan</td>
<td>53% by Haikou Meilan Airport Ltd, 20% by Copenhagen International Airports Administration, 27% for trade</td>
<td>48%</td>
</tr>
<tr>
<td>Airport</td>
<td>Ownership Details</td>
<td>Trade Share</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Shanghai Pudong</td>
<td>53% by Shanghai Airports Holdings Co., 47% for trade</td>
<td>47%</td>
</tr>
<tr>
<td>Beijing Capital</td>
<td>56.61% by Capital Airports Holdings Co., 43.3% for trade</td>
<td>43.39%</td>
</tr>
<tr>
<td>Xiamen</td>
<td>68% by Xiamen International Airport Holdings, 32% for trade</td>
<td>32%</td>
</tr>
</tbody>
</table>

In addition, there are some non-listed airports whose ownerships are partial privatized, such as Athens Venizelos Airport whose administration is a joint venture of Greece State Government and foreign funded enterprises. In specific, its 55% shares are held by Greece State Government, and the rest 45% are held by business groups led by the German construction giant Hochtief Corporation. It is the same case with the Airports Corporation of South Africa (ACSA) that has completed partial privatization with 80% shares held by Federal Government and the rest 20% transferred to Rome Airport Administration through international bidding.

In Mainland China, Xi’An Airport and Hangzhou Xiaoshan Airport have been partially privatized in sequence. In April 2007, Fraport and West Airports Holdings Company together with China Aviation Holdings Company (CAHC) jointly signed to invest and start up the Xi’An Xianyang International Airport Ltd with a registered capital of CNY2 billion. In terms of the airport ownership, West Airports Holdings Company held 50.9% shares with an input of CNY 1.018 billion in form of net assets, and Fraport and CAHC respectively held 24.5% shares with an cash input of CNY 490 million from each, as well as an cash input of CNY 2 million with equivalent to 0.1% share held by the Xi’An Airport Logistics Company subordinate to West Airports Holdings Company. By way of share-holding, Xianyang Airport aimed not only to absorb the construction capitals, but also to learn and establish a complete and efficient management system, which paved the way for further development in accordance to the modern corporation management system, and bringing in management personnel from shareholders to the Management.

(2) Concession

Generally, governments imposed strict restrictions to air transport industry in worldwide. On that condition, airlines and airports prefer the solution of concession or entrust to raise fund and boost management efficiency, so that the operation and management goals can be achieved without changes to the ownership.

Through the way airport administrations or business groups can be granted the concession or tenancy to conduct the privatized management on a period basis, which lasts usually 20-30 years. It is true that fund raising conditions and tenancy modes can be diverse, however, the down payment and the corporation annuity must be guaranteed. At present, most airports in Chile, Uruguay, Costa Rica and Tanzania operate in this model.

2.2.6 Model of Complete Privatization

Currently, airports whose ownerships and management rights are completely privatized are primarily set for general aviation and aviation clubs. Under relevant frames of restrictions from governments, there are seldom the airports which are complete private owned through the joint stock restructuring from the state owned. However, British Airport Authority (BAA) is l one of them. State owned as it was until 1987, BAA was shortly listed with 500 million shares in London Stock Exchange and became a successful example in process of complete privatization.
3. Efficiency Difference between Privatization and State/Public Ownership

In general, airport business models worldwide have been changed into commercialized operation since 1980s, but United States keeps the characteristic of airport public ownership by governments. As mentioned above, airports in US have essentially commercialized most of their business because of plenty of outsourcing and long term contracts with airline companies.

The three reasons for change into commercialized airport business models are as follows. Firstly, government is lack of enough investment in airport construction, while deregulation enables airport service demand from airlines and passengers to increase. Secondly, governments expect airports to utilize resources to obtain capital needed, because government comprehensive earning funds is facing up demand pressure from public sanitation and other government service industry. Finally, the more public concern is put to environment problems, the more it is difficult to expand airports. Simply because Environment evaluation process delays the process of airport planning, which makes central political power start to merge with local factor.

Since economic factor is the primary one to push airport privatization, various kinds of institutions have started to evaluate different airport management models through statistic data collection and analysis, case study, and theoretical research, etc.

3.1 Academic study

In 2008 Tae-Hoon Oum published his research report in Journal of Urban Economics. Through analyzing 109 airports globally, the report evaluates how ownership affects on airport efficiency (Base on airport overall output—including aviation and non aviation-and overall input). The purpose of study proves that private owned airports are more efficient than publicly owned, and public ownership airports with larger autonomous rights are more efficient than the one with less autonomous rights.

This study shows that:

(1) Private companies and self operation public airports or the airports managed by self operation airport entities have more efficiency than the airport directly under government administration or port authorities

(2) Although the average efficiency for airports managed by state or municipal government is lower than that of self operation airport entities, the absolute value discrepancy is not large.

In Nov 2005, together with other economists, Steven Craig compared the airports owned and operated by governments with the airports operated by airport management entities. Researchers are intended to compare and contrast the performance of overall operation efficiency (e.g. cost of per movement, per unit cargo and per passenger handling), capital cost, labor cost and use of science and technology of the two types of airports.

The research shows that because self operation airport entities are specially found for operating airports, generally speaking it is more flexible and professional in labor force use and investment decision. On the contrary, the opposite evidence also exists. Self operation airport entities have more decision-making power, as a consequence the phenomenon that airports administrations are more likely to seek for stronger authority powers, such as the power to buy favorites product with prize much higher than opportunity cost, or to buy product more than the best quantity."In general, the cost-inefficiency of airports operated by governments have the flaws of low efficiency in decision-making process and manpower policy, lack of concentration to airport relevant affairs and acquiring services from other departments rather
than from outsourcing suppliers.

### 3.2 Industry research

Some airports that are considering the conversion of management models may conduct specialized researches and analysis efficiency factor in various management models, which could be a part of choosing decision-making degree of the whole management models.

The Airport Administration in Allegheny County of Pittsburgh recently published a report that completely explained the achievements since 1999 when the transformation from government direct management models to airport administrations models. The main achievements such as finance management, O-D passenger growth, new carriers’ entry and low airport charges are especially mentioned in the report. However, the report does not explain the causal relationship between the achievements and management models change.

In 2005, the Municipality of Denver designated a team to evaluate the possibility to change from government management models to airport administration or other management models. Finally, the government went back to the model that the airport operates as a subordinate department of Municipality. However, the report put forth some advantages and disadvantages of government management models.

The advantages of government management models include:

1. Low cost in part public service
2. Enable to use government expertise
3. The existing political decision process could not be destroyed

The advantages of independent company transformation are as follows:

1. Acquisition of more authorization to make more rapid decision-making of operation, purchase, planning and manpower;
2. Reduce cost and increase efficiency
3. More concerns to interest of passengers and leaseholders

### 3.3 Conclusion

With respect to airport commercialization, several agreed conclusions are reached according to combing the academic and industrial opinions

Transformation from a department subordinate to governments, to an independent airport administration entity (including model of airport administration, non-profit organization or enterprise entity) is conducive to enhancing the efficiency of airport operation and capitals whatever model the airport eventually takes.

Generally speaking, efficiency in enterprise models is the highest, and it has nothing to do with the proportion of private
stock in company.

In the process of privatization, if the private enterprise cannot obtain the management right on a considerable period basis, the undercapitalization might occur. Nevertheless, privatization and long-term contract (e.g. Australian models) could effectively improve the situation mentioned above.

Privatization could lead to undercapitalization, service quality decline, service fee rise, etc. On that account, surveillances and supervisions in respect of prize and service of private companies are demanded.

4. Options of Airport Business Models

From the classification above, it could be learnt that the overall trend of airport models has changed into commercialization and privatization, but different methods are used in various countries. Basically, models of commercialization are affected by traditional economical models and legal institution in respective country, namely “path dependence”. For example, traditionally it is the custom in the UK to operate public affairs of road, telecommunications, and water and other fields by private enterprises, so the complete privatization is adopted in airport management. As members of Commonwealth of Nations, Australia and New Zealand implement similar economy system, which resembles the privatization of the UK. However, the process of privatization is slower in America. On the one hand, the private operation for a majority of business is realized by outsourcing and long-term lease contracts since the privatization of airlines, which leads to decline in privatized demand. On the other hand, laws restrict all levels of government and private operators to obtain any interest from airport privatization. There is little clear restriction to ownership of airports in the law in Europe, but state-owned enterprises still take certain place in national economy, particular in public affairs. As a consequence, partial privatization is adopted in these places.

Certainly, the business model of an airport in every country differs, and this is traceable to airport size.

4.1 Business models for large airports

Large size airports have various ownership formats, like Singapore Airport involved in direct operation by Singapore government, State-owned Schiphol airport and others with management models through special airport management companies, and the UK BAA and others of complete privatization.

Although ownership is various, in the aspect of operation, leading airports all pay attention to enhance operation efficiency, downsize management institution, encourage industry competition, improve service quality and develop non aeronautical revenue. For example, Fraport is basically responsible for main core business in airport, propel concessions to other business to society such as by means of public bidding, lease, interest split, franchising and so on. As airport authority is just responsible for core business with other business outsourced, cost of manpower is significantly reduced. For example, there are 1700 staffs in Netherlands Schiphol Airport Company, whose business are mostly outsourced. To guarantee airport service quality and passengers interest, besides making restrict management rules, the airport authority still widely adopts method of introducing competition in order to avoid monopoly and ensure passengers reasonable interest besides the establishment of strict international regulations. For instance, two major contractors at least are introduced for one particular business at Schiphol Airport.

Moreover, among world leading airports, non-aeronautical revenue contributes more to overall revenue. On one hand because of airport public-benefit character, government sometimes regulates the charging standards for airports standard which consequently result in limited revenue from air transport. On the other hand, airports have gathered considerable flow of passengers, whose demand of service in airports becomes a major means for revenue enhancement. Retail revenue of the UK BAA, for instance, is more than half of its overall revenue, and BAA not only provides service to passengers but also to residents nearby.
4.2 Business models for small and medium sized airports

The development of small and medium sized airports in the world demonstrates various characteristics. In terms of ownership, some airports are managed by state, and local governments, and some are market orientated managed by the private. Alice Spring Airport in New Zealand has basically realized privatization through many property right restructures. Meanwhile based on different countries’ law, airport accepts national financial support in various forms.

Airports are usually operated by specialized companies to enhance degree of specialization in operation. To reduce operational costs, small and medium sized airports also actively implement outsourcing strategy to outsource non-core business to the private, such as the man power cost of airlines, aviation ground services, and concessions. At the same time, many small and medium sized airports implement centralized management through the management of specialized companies to unify and manage several small airports in the region, and divide functions and orientations to optimize overall resources.

In business, many small and medium sized airports carry out differentiated management in order to avoid a direct competition with the surrounding airports. Luton Airport, for instance, primarily attracts low cost airlines, develops charter business and other general aviation business to effectively increase operational efficiency. In addition to core business, some airports actively develop airport-related economy, particularly development of airport related industries. In turn, economic development of the airport region brings stream of people and logistics to promote the development of the airport.

5. Creativeness of Airport Business Models

An enterprise to select different management system will decide the setting up of different organizations and operation rules to have different operating results. Choosing the management system complied with the company development needs must be based on the detailed investigation of property structure, organization and personnel structure, strategic objectives, enterprise policy environment, internal and external resource conditions, and the system conclusion of advantage and disadvantage of the management system and existing problems.

In view of the airport business model above, the analysis of the business model could be chosen from.

5.1 Model of Collectivization Management

Currently, airports collectivization management is primarily realized through capitals links. According to link differences between core enterprises and subordinate companies, it primarily falls into 3 categories. The first type is that most members, economic or asset integrated, are closely linked; the second one is that core members are loosely connected through agreements to set up a corporation that is relatively united and stable; the third type is that members are semi-close linked in respect of partial asset connection and management integrity.

5.2 Model of Modularization Management

Inside airports, core business and secondary business can be separated. In particular, airports’ commerce might be set aside for independent management. It is not only conducive for airports to concentrating more on flights security, but also offering opportunities for the entry of specialized companies to enhance the commercial operation efficiency and airport economic benefits. It also applicable for airports holdings companies to consider integrating such resources as specialized companies and separating them from the group for independent development. Or the holding companies may remix and integrate departments of similar functions to a united scale.
5.3 Model of Multiplication Management

To airport enterprises, the development of multiplication is recognized as a significant means for restructuring, downsizing the risk of business unification and securing the scale advantage. Business operations of multiplication shall be carried out among the similar fields and relevant industries, so as to tap fully the resources for core business and decrease the market risk in a cost-efficient way. In view of the features of the airport industry, its orientation to service and business operation has decided that it has much operational and managerial common place with other relevant industries, and its further development is prospective. Hence, airport industries should take the airport development as the core business, and to develop the business model of multiplication by influencing the relevant industries.

5.4 Model of Specialization Management

This model is set to enhance the management level and efficiency with respect to airport core business by providing professional services. However, it is not applicable to every airport except conditions that:

(1) Passenger and cargo traffic are sufficient for airport scales, otherwise the advantages of the model like cost-efficient, better market and lower risk could never be demonstrated;

(2) Airport ownership structures are more flexible. Only if airports are run by independent corporate entities, airport administrations can be stimulated to downsize costs and boost economic benefits.

6. Conclusion

Multiple natures and operational features of airports have decided diverse business models. In perspective of the public-benefit orientation, airports resource allocation is realized frequently by means of administration. Due to that, governments need to carry out different surveillances and supervisions to take a lead airports construction and management, ensure airports normal running and guarantee their conformity to public interests rather than the pursuit of maximized profit only. In perspective of the economic-benefit orientation, however, economic benefits are identified as an indemnity for social costs. For that means of administration may impose restrictions on airports business operation, the commercial operation on a basis of the corporate model can indemnify the regional development unbalance and enhance airports business performance. Further, neutralization of airports requests that governments should offer beneficial political environments, and that airports shall develop a beneficial market environment, so that both the two can provide excellent service for airlines and other airport units.

R.H. Coase, founder of new institutional economics, holds that institutional arrangements and innovations are consequences of men’s choices in accordance to specific environments. Governments, enterprises and markets, playing different roles with diverse positioning, jointly form an interest system. Governments should be recognized as institutional providers, institutional improvement propellers, interest coordinators and economical indemnifiers to downsize trade costs through clearly defining ownership structures, and stimulate the economical growth. As the best means of maintaining and handling the relation among humans, market plays a significant role to influence men’s decisions and actions, airport resource allocations and economical performances. While corporations, as specialized organizations with professional organization structures and techniques, are the propellers of institutional innovation to save productive costs, develop the scale effect and boost the efficiency of resource allocation. Similar to highways, airports, business or public-benefit oriented, differ in perspective of business models, rather than in perspective of the nature as infrastructures.

Therefore, whatever public-benefit oriented or business-oriented the airports are, governments shall take a positive lead in institutional provision and propelling, interest coordination and market indemnity. Through the establishment of administrative organizations, governments should carry out efficient supervision as well as provide decision makings,
coordination, guidance and surveillance for significant issues in airports construction, development and management. Also, governments are responsible for the airports strategy planning and development policies toward investments or subsidies, so as to achieve the interest integrity of states and the airport industry.

In addition, public-benefit oriented airports shall be government owned, so that airport administrations can be established to operate airports representing the public benefit. Meanwhile, governments should subsidize the airports to cover the loss and seek support of airlines and other airport units. However, the ownership of business-oriented airports shall be multiple, so as to establish independent legal entities with complete competitive subjects. On that condition, the airports can operate independently and be responsible for profit and loss in line with the modern corporate system. Then a fair subject relation of inter-dependent and mutual promotion with airlines will be set up.

To have more words, airport profitability is dynamic and fluctuating. Considering that, organizational structures of airport authorities shall be flexible accordingly. In contrast, the positioning of airports authorities is oriented to overall integrated achievements of states and the airport industry. As a consequence, it ought to be comparatively stable.
7. Reference

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