The airport industry has developed significantly in the past decades, particularly due to the increase of private initiatives in the sector – while privatizations brought innovative ownership models, PPP severely revolutionized airport finance. Therefore, it is important to understand the consequences of this trend, assess their socio-economic impacts and look for correlations that may exist considering the triangle Ownership/Governance/Financing.

As far as PPP are concerned, despite their relevant role in the evolution of the transportation industry, examples of failure are quite frequent. Consequently, in-depth and thorough analysis are imperative, so as to identify the weaknesses of these models and find solutions that would allow minimizing investment's risks and increasing the likelihood of success.

In addition to being vehicles of economic well-being, airports are also foundations of social development. With the purpose of providing more efficient infrastructures and overcoming the gap between airports’ demand and supply, it is pertinent to identify who are the new market players and understand how the business is being managed and financed. Moreover, it is mandatory to properly structure a framework for PPP implementation in airports. As a result, a set of guidelines is proposed, with the objective of helping policy-makers and potential investors developing successful partnerships.

Key Words: Airports; Public-Private Partnerships (PPP); Ownership Models; Project Finance; Infrastructure Finance; Privatization.

INTRODUCTION

Nowadays there is clear evidence of the large gap between the worldwide infrastructure needs and the available public resources allocated to meet those needs, imposing significant socio-economic costs to countries, which were led to a lower productivity levels and reduced market competitiveness (Eggars and Startup, 2006). However, during periods of slow economic growth and financial crisis, pressure on public finances is very intense, leading to the dilemma: cut spending vs. economic stimuli (e.g. infrastructure investments) (Vives at al., 2010). Due to the lack of funds and financial constraints, governments have been driven to a dead-end, where despite the need for infrastructure development is imperative, markets do create favourable financing conditions, especially in countries with low credit ratings. Thus, so as to address this shortage, the growth of private initiatives in infrastructure finance has been increasing.

Regarding the airport industry, despite the privatization trend has already begun, fully privatized airports are still rare, due to the monopolistic context in which they are inserted. Consequently, PPP appear as a viable solution for governments to overcome the referred gap, keep a certain level of intervention over the sector and, simultaneously, take advantage of the benefits provided by the private sector.
This project aims to reckon on these realities, focusing on how PPP might be applicable in the development of the worldwide airport network. The objective is to define a set of guidelines that will help policy makers structuring the political decision making process and avoiding neglecting imperative points of analysis, and potential investors evaluating projects, preparing proposals and raising awareness to relevant matters of analysis.

For many years PPP have been wrongly applied, creating a major prejudice concerning this type of infrastructure delivery models. This project has the goal of proving the potential of PPP and that, with properly designed and carefully analyzed plans, it is possible to launch PPP endeavours with a high likelihood of success.

**Public-Private Partnerships in Transportation**

**What’s a Public-Private Partnership after all?**

PPP are contractual agreements between the public and the private sector that aim, through a proper allocation of risks, to assign the private sector responsibilities typically undertaken by governments, in particular, infrastructure investments. Considering the Principal-Agent Theory, while the State plays the role of Principal, defining the necessary specifications for the development of the project, the private partner plays the role of Agent, responsible for the delivery of service and act according to the guidelines provided (Viegas, 2011).

With the financial constraints the world is facing, the banking sector experiencing liquidity problems, the countries’ overweighed Sovereign-debt and the clear attack to the sustainability of all the economic system, PPP seem to be a valid alternative for the development of major projects, decreasing the impact of infrastructure investments in countries’ public budgets. PPP allow governments to allocate resources more efficiently, diversify the range of projects, achieve higher Value for Money (VFM) and be benefited by the innovation brought by the private sector.

In this type of solutions, contract design and management play a major role and may be appointed as two of the most important steps in order to achieve successful partnerships and satisfactory infrastructures and services (Genton, 2011). Despite their potential, the complexity of these contracts has been highly criticized since they frequently lead governments to higher public expenses than if the project was publicly held. Reasons such as contractual gaps, harsh disputes or inappropriate risk management may drive to extremely difficult situations, such as governments bearing “hidden” responsibilities and incurring in significant expenses, or governments bailing projects out to ensure the continuity of the service (Fraport, 2011).

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value for Money</strong></td>
<td><strong>Complex Contract</strong></td>
</tr>
<tr>
<td>Maximization of business potential; Optimization of cost structures.</td>
<td>Capital and time consuming process; Responsible for several cases of PPP failures.</td>
</tr>
<tr>
<td>Improvement of constructive/operational performance.</td>
<td>Creation of financially opaque structures.</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td><strong>Design and Management</strong></td>
</tr>
<tr>
<td>Reduction of burden over public budget; Allows alternative sources of capital.</td>
<td></td>
</tr>
<tr>
<td><strong>Private Finance</strong></td>
<td><strong>Ring-Fencing Structures</strong></td>
</tr>
<tr>
<td><strong>Risk Management</strong></td>
<td><strong>Capital Intensive Character</strong></td>
</tr>
<tr>
<td>Potential to optimize the design of risk allocation plans.</td>
<td>Demands significant resources to define projects’ Terms of Reference and to carry out the procurement stage; High transaction costs.</td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
<td></td>
</tr>
<tr>
<td>Implementation of state-of-the-art technology.</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 – Typically appointed advantages and disadvantages of PPP
MAJOR TYPES OF PUBLIC-PRIVATE PARTNERSHIPS

MANAGEMENT CONTRACTS

Management Contracts are short term contracts (3-5 years), where a private player is awarded the responsibility of managing a determined service (Tomová, 2009). As production and commercial risks are publicly borne, contracts are frequently designed as performance-based, creating incentives for private parties to implement sharp management approaches.

Furthermore, as the purpose of a Management Contract is exclusively to bring managerial expertise into the public sector, with the innovative practices and the industry know-how, private parties are not aimed to invest in the project, as its ownership rights belong to the public sector.

LEASING CONTRACTS

In Leasing Contracts, private agents in addition to managing the infrastructure, they also bear the production and commercial risks generated by the development of the economic activity (Iosa et al, 2007). These contracts assign the definition of the business strategy to the private players, which shall meet the contractually defined quality standards.

With production and commercial risks are privately borne, this performs as a natural incentive for optimization and improvement. Nevertheless, it shall be considered that in this approach, public authorities remain liable for the infrastructure’s ownership rights, meaning that CapEx investments are to be publicly carried.

CONCESSION CONTRACTS

Concession contracts assign to the private party the responsibility for the full service delivery, including implementation and operation of a determined infrastructure (ADB, 2010), for a determined period of time (15-50 years) (Graham, 2008). During this period, the ownership rights are kept by the private side, being then transferred to the State by the end of the contract duration (Zarco-Jasso, 2005). In this contractual approach, private consortia are usually composed by companies from different industries, with the purpose of covering the different expertise areas required, and allowing allocating risks to the most suitable parties.

Figure 1 – Example of the contractual structure in a Project Finance venture

In Concession Contracts, and more particularly in BOT-type ventures, Project Finance is the most typical financing model used. Project Finance is a highly-leveraged type of long term infrastructure finance, based on the projected cash flows of the project rather than on the shareholders’ balance sheets (Hillion, 2011). Due to its structure, project finance ventures allow projects’ sponsors to undertake projects without granting the lenders full recourse to their assets, consequently eliminating the contagion risk. To shield the sponsors, a legally and

1 The State usually keeps “step-in” rights, in the event the concessionaire fails to meet the contract.
2 Usually, in project finance, debt accounts for 80 to 90% of the capital required to launch the project.
financially independent project company – the Special Purpose Vehicle – is specifically created for each project, bearing its risks and diminishing investors’ exposure (Estache et al., 2007). It shall be noticed that if the project company faces difficulties in complying with the debt terms, or especially in the event of default, senior lenders are entitled to claim rights on assets and assume the managerial control of the project.

**PFI – Private Finance Initiative**

In PFI, the private sector is responsible for the development and operation of the infrastructure, keeping also its ownership rights. The products/services generated by the infrastructure are then sold to the public sector, through long-term purchase agreements at an agreed price, implying there will always be direct governmental financial obligations (Clark and Root, 1999).

In transportation there is broad experience in the application of PFI, where the private bidder responsible for the construction, management and maintenance of the infrastructure does not bear the commercial risk of the project, being assigned an annual monetary compensation for the investments undertaken (Government of Assam, 2011).

**Divestiture**

Divestiture stands for the sale of an equity stake of a stately-owned asset to the private sector, through a trade sale, listing the company in the stock market, etc. (Graham, 2008). Typically, these operations aim to either bring management expertise to the company or to overcome public budgetary constraints, depending on the governmental objectives.

Although it may be considered a simple transference of ownership rights, the interaction between both sectors in partially divested companies is quite relevant, not only in the allocation of capital funds, but particularly also in sharing management responsibilities.

**Airport Ownership and Governance Models**

**Public Ownership and Governance Models in the Airport Sector**

**Publicly Owned Airports Operated by a Government Department**

In terms of airport ownership, this is the most traditional approach and stands for having the airport sector, owned and operated by a Governmental Department (e.g. Ministry/Department of Transportation or Defence).

In addition to being in charge of airport operation, air traffic control and navigation, these national government departments are often responsible for the operation of the national airline company and for the regulatory power. Therefore, within this model, serious conflicts of interest are possible due to the promiscuity in the airline/airport/regulator relationship, also including significant inter-governmental-levels disputes (Tretheway, 2001), and likely issues of underinvestment, as political priorities might not include the airport investments in their agenda.

**Publicly Owned Airports Operated by a Local Governmental/Quasi Governmental Entity**

Clearly based on the idea of decentralization of the power, this model defines smaller operating units, with tighter managing approaches and closer to the real problems, assigning to the local government level the power to manage their own airports.

**Publicly Owned Airports Operated by a Governmental Agency**

As a simple variation of the Government Department model, this modality is a small step towards airport autonomy. In this approach, the agency is responsible for airport operations while the regulatory power is left for the Ministry, avoiding further conflicts of interest.
PUBLICLY OWNED AIRPORTS OPERATED BY A PUBLIC CORPORATION

This model brings a severe paradigm change in how the airport sector is owned, managed and operated. In the Public Corporation approach, there is a clear separation of operation and regulation, as the former is assigned to a publicly-owned company while the latter is a ministerial responsibility, clearly eliminating the previous existing conflicts of interests.

Despite it must report its activity to the Ministry, the public airport corporation is a completely independent entity, due to its corporate status, particularly in financial terms. In fact, as a governmental corporation, this entity has its own accountability (independent from public budget) and a higher level of flexibility to define its financial planning (Tretheway, 2001).

PUBLICLY OWNED AIRPORTS OPERATED BY NOT-FOR-PROFIT CORPORATIONS

This airport ownership and governance model stands for decentralizing the power, assigning to local authorities the responsibility to take over their own airports. Once again, through smaller operating, it is intended to promote a closer performance control and improve management due to less complex and bureaucratic organizations. The final plan was to set up non-governmental not-for-profit3 private companies to be responsible for the operation and management of the airport network, under 60-year lease contracts (Gilien, 2010). This model allows a higher level of stability to the board of directors, as it is not dependent on political cycles, encourages long term strategic planning with a market-oriented perspective, and its non-for-profit character establishes that profits are to be reinvested in the infrastructure. It is imperative to mention that the entities running these companies were industrial or professional institutions, whose major goal was the socio-economic development of the region rather than extracting financial benefits.

PUBLIC-PRIVATE OWNERSHIP AND GOVERNANCE MODELS IN THE AIRPORT SECTOR

PUBLIC-PRIVATELY OWNED AIRPORTS UNDER CONCESSION CONTRACTS

A good example of the implementation of concession contracts in the airport sector is India which, in the 1990’s, launched a large scale PPP Program. The Indian government proposed a very broad PPP Program which aimed to restructure and improve the national airport system (Graham, 2008), in order to meet the infrastructure requirements of this emergent economy. By this time, India was also living several difficulties as far as technological knowledge was concerned and the call for the private sector to invest in the country was found to be the best solution to import knowledge and to bring the technological state-of-the-art (SMCAGI, 2006). Huge economic centres like Delhi, Mumbai or Bangalore are some of the examples that experienced the benefits brought by the Program, which was revolutionary in the world due to its large scale.

The Indian Program also defined that there should be some level of public intervention over the sector, even if minority, and a 26% stake of the companies developing the ventures was assigned to the Airport Authority of India (AAI). The 74% left would be owned by the rest of the companies composing each consortium, and was believed to be a reasonable stake that would incentivize good performance by the partners developing these endeavours (MCAGI, 2006). The Indian case has proved to be very successful and has shown how PPP can be a sustainable and feasible solution concerning airport development. The Bangalore International Airport (BLR), for instance, developed under a 30-year BOT, is today regarded as a role model in the implementation of this approach (Lees, 2008).

However, the reality shows that there are several instances of failed PPP experiences. Despite in airports the experience is not that bad, some failure examples are very well-known, such as the Costa Rican Juan Santamaria International Airport (SJO). SJO, in San José, became

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3 An independent not-for-profit corporation (INFPC) is a company with no shareholders, implying no dividend distribution and meaning that profits are used to re-invest in the infrastructure.
notorious for the failure of the PPP model implemented, where the private consortium running the airport ended up being forced by major capital lenders, due to accusations of mismanagement (Lees, 2008). A new tender was then carried and a new consortium acquired the participation in the airport company and took over the project. This conglomerate has been in charge of SJO’s operations after the definition of a solid and coherent strategic plan, which aimed to turn SJO into a world class airport (ACI, 2010) and to put competitive pressure in the Central-American airport market.

Table 2 – Appointed Key factors of success and failure for BLR and SJO cases

<table>
<thead>
<tr>
<th>Key Factors of Success in BLR (Duffy, 2010)</th>
<th>Key Factors of Failure in SJO (Lees, 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Private Consortium</td>
<td>Problematic Concession Design</td>
</tr>
<tr>
<td>Led by the German company Siemens AG.</td>
<td>Poor risk allocation plan.</td>
</tr>
<tr>
<td>Organized Political Structure</td>
<td>Lack of Transparency in the Tender</td>
</tr>
<tr>
<td>Joint venture between local and central governments.</td>
<td>Doubtful procurement with not clear evaluation criteria.</td>
</tr>
<tr>
<td>Proper Tariff Regulation</td>
<td>Under evaluation of investment requirements</td>
</tr>
<tr>
<td>Controlled by a neutral department, and defined under clear guidelines.</td>
<td>Led to a continuously spiral of public subsidies and private reluctance to undertake investments.</td>
</tr>
<tr>
<td>Airport City Concept</td>
<td>Concessionaire lacked of power to control pricing</td>
</tr>
<tr>
<td>Developed to strengthen the attraction of the airport within the traveller community.</td>
<td>-</td>
</tr>
</tbody>
</table>

PUBLICLY OWNED AIRPORTS WITH PRIVATE OPERATION OF TERMINALS

Especially in North America, it is very common situations where the ultimate liability over the airport remains public but where private investors, usually airline companies, are who actually develop terminal buildings (e.g. Chicago O’Hare or NY JFK Intl. Airport) (Tretheway, 2001).

PUBLICLY OWNED AIRPORTS UNDER MANAGEMENT CONTRACTS

Several airport corporations have been growing significantly, representing today huge economic groups with activity developed around the globe. Fraport AG or the Schiphol Group are some examples of players that have been globally hunting management contracts in other markets.

PUBLIC-PRIVATELY OWNED AND GOVERNED AIRPORTS

Despite the air transportation sector has always been regarded as a national strategic asset, private involvement in the airport sector is everyday more frequent, particularly through the acquisition of stakes in airport companies. Several motives may hide behind governmental decisions to carry out partial divestitures:

- **Bring private expertise to the airport business:** When the public managerial expertise is not enough to take full advantage of the airport potential;
- **Reduce public exposure to airport development expenses:** Governments may partially sell the sector, willing for the private sector to share costs;
- **Raise capital for large scale investments:** In case of CapEx needs, large amounts of capital are required and there may be a call for private involvement to invest;
- **Strategic alliances with other airports:** Like the case of Schiphol-AdP alliance, which aims to develop a strong “dual-hub” player in the European market (Forsyth et al, 2009).

PRIVATE OWNERSHIP AND GOVERNANCE MODELS IN THE AIRPORT SECTOR

INTRODUCTION

Defended and opposed by many people, the roots of privatization argue that it aims to increase efficiency, induce competitive pressure in the market, reduce monopolistic power, decrease the
level of governmental expenses, increase State revenues and enhance economic growth and social welfare (Macário, 2011).

In fact, privatization is defended to be the most important step towards competition, inducing the market to be more dynamic, leading to efficiency improvements and to a reduction in operational costs. However, depending on the context, privatization can actually be a major source of benefits or drawbacks, what may lead to a wide set of outcomes. Situations of market abuses are quite likely in privatization processes, meaning that strict and exigent economic regulation must be defined, implemented and enforced so as to diminish this risk. Moreover, it shall be emphasized that many times, privatizations lead to scenarios where public monopolies are turned into private monopolies, what stands as a clear step backwards in terms of social welfare (Vasigh, 2009). In situations like this, regulatory power is imperative to guarantee that abusive actions by dominant market players are prevented.

Finally, privatizations shall be regarded more than a simple divestiture to overcome budgetary constraints. The former Director General of IATA Mr. Bisigani said, “Privatization is far too important to be viewed as a quick fix to the Government’s current budgetary difficulties. Long-term vision is needed...”, meaning that it is imperative to take into account the possibility of achieving gains in operational efficiency, in connectivity and in regional economic benefits.

PRIVATE VENTURES IN THE AIRPORT SECTOR

In the 1980’s, the British Government was fighting unacceptable debt issues, leading the State to launch a severe privatization program, which included the divestiture of BAA, the national airport authority. BAA’s privatization was done through an IPO in the London Stock Exchange and was the first case of airport privatization in the world, revolutionizing the sector⁴.

Together with the UK, New Zealand played a pioneer role regarding airport privatization. During the 1990’s, the three largest national airport operators were converted into individual corporations, owned by a public consortium composed by the central and local governments, with an ultimate aim of selling the central government’s stake. Auckland was the first, with the government listing its 51.6% stake in the stock market (Graham, 2008), while the second was the trade sale of a 66% stake at Wellington International Airport, to Infratil (Infratil, 2011). Regarding Christchurch, the airport is still today under public ownership (Graham, 2008).

<table>
<thead>
<tr>
<th>Table 3 – Pros and Cons of Privatization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROS</strong></td>
</tr>
<tr>
<td>Financial Flexibility</td>
</tr>
<tr>
<td>New sources of capital</td>
</tr>
<tr>
<td>No public budget constraints</td>
</tr>
<tr>
<td><strong>Diversification of the Core Business</strong></td>
</tr>
<tr>
<td>More experiences to costumers</td>
</tr>
<tr>
<td>Increase airports’ attractiveness</td>
</tr>
<tr>
<td><strong>Managerial Expertise</strong></td>
</tr>
<tr>
<td>Break-through management</td>
</tr>
<tr>
<td>Innovation</td>
</tr>
<tr>
<td><strong>Market-Oriented Thinking</strong></td>
</tr>
</tbody>
</table>
Privatization: For or Against? (See Table 3)

Privatization is a very controversial topic, being many times associated with corruptive behaviours, inflicting serious losses in terms of social welfare. That is why when considering privatizing the airport sector, governments shall address significant focus concerning the subject, analyzing its likely outcomes and what impacts it would have on the society.

Airport Finance

Introduction

After the 2007-2008 financial crisis, and the more recent Sovereign debt crisis, the financial industry had to reinvent itself and whole new paradigm was created. The reality is that, today, infrastructure investments are much more constrained regarding capital availability and therefore infrastructure finance is a prominent issue to be considered.

Airports, in particular, constitute some of the most capital-demanding infrastructures and the level of risks to which these investments are subject to is very significant, severely diminishing the ability of governments and/or private investors to undertake such endeavours. Moreover, all these facts are aggravated by the self-sustainability of the sector, when in operation, as airports are characterized by significant operational expenses. Despite it is commonly defended to be a very profitable industry, there must be a serious commitment by the management teams in the implementation of sharp and rigorous strategies, so that they can extract it is possible to take advantage of those benefits (Doganis 1992).

Sources of Capital

Retained Earnings

Retained earnings come from airport revenues, which are majorly ensured by aeronautical and non-aeronautical charges and off-airport revenues. These are the very first source of capital available for airport companies to finance investments and launch projects.

Special Purpose Taxes

This is a major source of capital to finance key capital investments in the airport sector. Usually assigned directly to the airport operators (Neufville and Odoni, 2003), these taxes are very common in the US, where they are specifically used to improve security, safety or capacity issues (Graham, 2003).

Governmental Grants

Governmental Grants are non-returnable sources of funding, provided by national or international organizations, whose interest is the development of the project rather than taking financial profit of it (UN, 2004). As referred, infrastructures have generally been regarded as public interest therefore governments have been the major infrastructure providers. Due to this reason, public grants still continue to be a major funding source in infrastructure delivery.

One last point to mention is that public intervention can have other forms. The State can also contribute with new/existing facilities or land space, be engaged as an off-taker, etc.

Debt

In a nutshell, debt is capital borrowed, used for the development of a project. Being at the highest level of seniority, its interest rates are the lowest, when compared to other types of

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5 The airport cost structure includes labour, capital, services, maintenance, administration, etc. Worth mentioning is the fact that, generally, only labour and capital account for more than 60% of the total cost.
securities. Nevertheless, even between debt financing tools, the risk profile varies significantly, meaning completely different levels of interest rates.

Table 4 – Different types of debt financing tools

<table>
<thead>
<tr>
<th>Low Cost Loans</th>
<th>Only eligible to national structural projects</th>
<th>Provided by Development Banks or Foreign Gov. Authorities</th>
<th>Typically includes advisory services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Loans</td>
<td>Short/mid term loans provided by regular banks</td>
<td>Higher interest rates but with quick liquidity</td>
<td>Generally used to cover financial gaps</td>
</tr>
<tr>
<td>Bridge Financing</td>
<td>Useful source in the first stages of the project</td>
<td>Short term auxiliary financing tool</td>
<td>Useful while long term loans are under appraisal</td>
</tr>
<tr>
<td>Bond Financing</td>
<td>Short/mid/long term fixed-rate debt securities</td>
<td>Used by governments and corporations</td>
<td>Purchased by institutional investors and traded in the secondary market</td>
</tr>
</tbody>
</table>

QUASI DEBT-EQUITY

Quasi Debt-Equity instruments are financial tools, structured with warrants and/or options, which are placed in-between debt and equity (UN, 2004).

A fairly good example is yield-Based Preference Shares. This special type of equity securities does not grant decision making power and dividends are generally fixed (similar to debt), however failure to pay dividends does not force companies into default (similar to equity).

EQUITY

Equity is a type of securities, in which capital is traded in exchange of ownership rights of a company/project. Being at the lowest seniority level (meaning higher risk), shareholders have secondary claim on assets and are only entitled dividends after debt holders are paid.

For investors willing to take the investment risk of becoming shareholders, it generally means that the possibility of very attractive and sound rewards exists, which usually come as high Return-on-Equity and significant share valuations. In all, the cost of equity capital is the highest, recognizing the level of risk to which shareholders are exposed (Duque, 2011).

CAPITAL STRUCTURE

The capital structure of a project is the combination of all the needed capital sources. Its definition depends on a batch of factors, such as: capital cycle and cash-flow generation, taxes, financial risk, capital flexibility and cost of capital.

GUIDELINES FOR THE APPLICATION OF PPP IN THE AIRPORT SECTOR

BRINGING PPP TO POLICY AGENDA

Launching a PPP Program is a serious step forward in how economic and financial politics is made. It requires strong political will and a very significant determination regarding what is actually wanted, having long-term perspective when planning investments and political choices.

Despite policy issues may be quite urgent, many times the incorporation speed of these issues in the policy agenda does not reflect that urgency, therefore moments of opportunity (also known as Policy Windows) for policy discussion shall be found. Being of public interest may be the first major push towards the creation of these windows and, as population’s support is imperative for a successful discussion, people must feel their concerns are being analyzed.
Launching a national PPP Program is a major policy initiative, and several steps must be covered when structuring such ambitious endeavour. In this section, a methodology for this definition is proposed, so as to address every single important topic.

**IDENTIFICATION AND PRIORITIZATION OF PROJECTS**

The following stage is to carry out a deeper identification of the investments deemed to be relevant in the national context—typically based in Public Investment Programs (ADB, 2008).

The identified projects, in addition to being evaluated as regards to their socio-economic impacts, must also be subject to a suitability test, so as to analyze if projects gather the necessary requirements to be launched as PPP, through the proposed PPP Suitability Filter (MFGI, 2010). Based on basic evaluation criteria and local market conditions, the filter aims to assess the barriers of PPP implementation and eliminate *a priori* condemned projects, carrying out preliminary VFM tests and developing SWOT analysis for different solutions. The criteria is here separated in two types—Indispensable and Significant—where the former are imperative to exist in a successful PPP, while the latter are likely to have an important role.

**Table 5** — 1st Order Evaluation Criteria, adapted from (Anvuur et al, 2006) and (Vives, et al, 2010)

<table>
<thead>
<tr>
<th>Evaluation Parameters</th>
<th>Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Significant Factors</strong></td>
<td>Fiscal and budgetary constraints, stable micro and macroeconomic environment, potential for improved services to the community, possibility of financially sound projects, adequate legal and regulatory frameworks, WTP, and government support</td>
</tr>
<tr>
<td><strong>Indispensable Factors</strong></td>
<td>Political uncertainty, lack of a credible PPP market, concerns over transaction and bidding costs, institutional capacity, size and location</td>
</tr>
</tbody>
</table>

Another important point at this stage is the prioritization of projects. Governments must clearly identify which are the priority projects to invest in, so as to assign specific focus on the most relevant ones. The prioritization process shall be done through a Multi-Criteria Decision
Analysis, where project’s economic viability must be the primary evaluation criterion, and other criteria should be minimum/maximum capital requirements, demand, financial feasibility, etc.

**DUE DILIGENCE AND FEASIBILITY STUDIES**

At this stage, the goal is to carry out studies that will provide the basis for the total understanding of the projects’ socio-economic and financial frameworks (Kerali, 2011). A thorough Cost-Benefit Analysis shall be led, so as to acknowledge the socio-economic impacts of investments and perceive which will contribute more actively in fostering national economy.

At this point, is crucial to find the most suitable PPP, according to the profile of the project. With this purpose, two additional tools are proposed (MFGI, 2010):

- **PPP Family Indicator**: Preliminary assessment of which PPP model should be adopted. The evaluation considers the existence of CapEx programs, the ownership model to be adopted, the financing sources and the private sector operational roles;

- **PPP Mode Validation Tool**: Essentially, a risk structure is proposed by the procurer and then a comparison is made with pre-defined common risk allocations of each model, so as to understand if there is a match. In the end, risk allocation discrepancies are shown, clearly identifying the topics to be revised or discussed. The tool shall also integrate the use of risk mitigation tools (e.g. political risk insurance, credit guarantees, subsidies, local currency financing, etc.) (Anvuur, 2006).

Afterwards, projects’ financial feasibility must be assessed, as well as, if the project actually delivers VFM or not. Consequently, two other tools are proposed (MFGI, 2010):

- **PPP Financial Viability Indicator Model**: Assesses key topics concerning the financial feasibility of the project, testing them with a scenario-analysis (with different capital structures and project outcomes). The major aims of this tool is to evaluate relevant financial indicators (e.g. IRR, DSCR, LLCR, etc.) and to assess the project’s likelihood to attract private capital and its public implications (e.g. need for subsidies);

- **PPP VFM Indicator Tool**: Provides a probability distribution of VFM delivery. The model assigns a cost to every risk and, using as inputs the results of the previous model, it computes the value of the projects and makes a comparison with the Public Sector Comparator (PSC), so as to assess which model delivers higher VFM.

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**Figure 4 – Decision Support System for PPP Implementation**

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6 Uncertainty is modeled by the usage of probability distributions for the estimated costs of risks.

7 The PSC estimates the risk-adjusted cost of a project, if to be publicly developed. Despite not to be used deterministically (it generally is very optimistic and with a low risk consideration) (Kerali, 2011), it is an interesting indicator and an useful benchmark when evaluating private proposals.
**PROCUREMENT AND CONTRACT AWARD**

Carried out through the usual procurement process, at this stage it is important to emphasize the significant importance of proposals’ evaluation. As the stage of evaluation of private bids, proposals’ appraisal must be very rigorous, both technically (e.g. past experience, O&M know-how, etc.) and financially (e.g. subsidies, percentage of revenue share, etc.).

Moreover, all proposals must be subject to VFM measurement, with the purpose of acknowledging if proposals deliver VFM and how they are structured, through a careful comparison with the PPP VFM Indicator Tool computed in the previous stage.

**IMPLEMENTATION, CONTRACT MANAGEMENT AND BENCHMARKING**

Contract Management shall begin at the pre-operative stages and follow the project’s lifecycle until contract closure and asset transfer. This step is of major importance for the success of any PPP venture and governments must ensure the existence of mechanisms responsible to monitor contractual compliances, enforce the application of law and regulation, ensure VFM delivery and resolve disputes between business partners.

Furthermore, it is mandatory to carry out benchmarking processes to compare the productivity and efficiency of the privately led business. Organizations need goals and targets for their management, their stakeholders and their employees, and benchmarks are tools which show whether the organization is meeting those very same objectives and what can be improved.

**FINAL CONCLUSIONS AND FURTHER DEVELOPMENTS**

The guidelines here proposed aim to help public and private entities interested in giving a step forward regarding infrastructure delivery. In many countries, PPP are now considered evil solutions that neglect public interest and protect privates’, however, this guide proves that well-planned programs, with clearly specified goals, thorough analysis of investments’ risks and transparent due diligence and procurement may lead to interesting answers regarding the development of transport infrastructures.

Furthermore, the guide is structured in a way that allows the analysis in the perspectives of both the Principals – Policy-Makers – and Agents – Potential Investors. The first aim is to transform the policy process, promoting transparency and consistency and to induce a sense of responsibility by political agents. Structuring decision-making processes is probably one of the biggest flaws in the nowadays’ political process, therefore the proposed method is a clear attempt to overcome the problems that have arisen in the past. Secondly, potential investors are...
also benefitted by the proposal, as it is an eye-opener regarding PPP implementation, mentioning several matters that could be disregarded by these players when appraising investments or evaluating projects, as well as to draw attention to matters likely to be neglected by governments and which are deemed to be imperative. In all, it significantly boosts the overall awareness regarding PPP, consequently increasing the bargaining power of every entity engaged and providing a holistic consciousness concerning the applicability of PPP in airports.

To conclude, a relevant number PPP ventures has been erroneously led in the past what developed, in many countries, a preconception about these models. However, there are several other examples that prove the potential of PPP and how they can lead to successful ventures, when properly designed, implemented and monitored. The infrastructure gap is severely felt in the airport industry, therefore a counterattack is imperative to overcome it. Especially due to the recent financial crises, both governments and private players are now much more restrained in terms of financial capability to undertake such investments thus, joint ventures between governments and private corporations may probably be one of the most viable solutions to fight the referred gap between infrastructure demand and supply.

REFERENCES


Anvuur, A. et al (2006), making PPPs Work in Developing Countries: Overcoming Common Challenges, CIB W107, Construction in Developing Countries International Symposium, Chile;


Genten, P. (2011), Contract Management, Slides of the Module Project Management and Large Scale Integration, MSc. in Complex Transport Infrastructure Systems, MIT Portugal;


Hillion, P. (2011), Project Finance, Slides of the Module Project Finance, MBA, INSEAD;


MFGI (2010), Developing toolkits for Improving Public-Private Partnerships Decision-Making Processes, Developed by AusAid, the World Bank, PPIAF and the PPP Cell of the Ministry of Finance - Government of India;


Vives, A., et al. (2010), Selecting Infrastructure Delivery Modalities: No time for Ideology or Semantics, Journal of Construction Engineering and Management, ASCE;