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Enhancing sustainable mobility: A business model for the Port of Volos

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Abstract

The current paper concerns the investigation of the possibility of implementing Public Private Partnership (PPP) in the Port of Volos and eventually, the development of a business model supporting it. For this purpose, extensive literature research was acquired, in order to fully comprehend the organizational schemes and state of practice of PPPs, their general features, as well as assess their efficiency in certain port functions and services. At the same time, the corresponding legal and policy frameworks were also studied, applying in international and Greek case studies. Additional research was conducted, aiming at the functions of the organization, where a private involvement would potentially benefit the organization itself, as well as the rest of the stakeholders. This part of the research included interviews with key staff of the Volos Port Authority and local travel and port agents and the completion of survey questionnaires by a random sample of 100 passengers, during afternoon hours. The interviews were focused mainly on the Port Authority's operation, while the questionnaires were focused on the port infrastructure, the provided services and the satisfaction of the passengers in regard to these factors. The collected data were analyzed, using a modified version of Analytic Hierarchy Process (AHP) to decide the importance of certain port functions and services. Subsequently, three possible ownership models were formulated. The proposed models were the current one, a landlord model and a combination of the current one with some level of privatization of port services or facilities. Based on literature research, their effectiveness on selected port functions and services was evaluated. The results of the aforementioned process indicated, that the landlord ownership model would be the most effective for the particular case of Volos Port Authority, followed by full privatization, with the current model as a close third possibility. More specifically, the landlord model seemed to perform better in improving both the operation of the organization and the level of passenger satisfaction, through its increased flexibility, the possible segmentation of services, increased capital investment and a reduction of bureaucracy. Using these results, a business model was formulated, based on the Business Model Canvas.

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1. Introduction - Literature review

In recent decades, there has been an increasing interest in Public Private Partnerships. Public Private Partnerships are collaborations between the public and private sectors, aiming at developing infrastructure or providing services (Katz, 2006, Greek Ministry of Finance, 2006, Tan, 2012, ADB, 2008). This paper tries to answer the question of whether such a model could be beneficial for the case of the Port of Volos and which one in particular would work best towards that goal, while developing a business model to support this potential partnership.

Many different forms of PPP schemes have been used extensively worldwide. This is mainly due to the advantages they offer to the public sector, such as additional funds (Tan, 2012, ADB, 2008), reduced long term costs (Deloitte, 2006), additional technical expertise (Tan, 2012) and increased efficiency (ADB, 2008). However, there are also some disadvantages. More specifically, the complex nature of such schemes may lead to prolonged negotiations and large consulting and legal costs (Tan, 2012). In addition, there are also the issues of potential profiteering (Tan, 2012) and the business venture's possible failure (Katz, 2006) to consider.

A lot of PPP models have been implemented in various sectors. In service contracts, the public sector subcontracts a project (the development of infrastructure or the provision of a service) to a private entity, which has the responsibility to complete it (UNESCAP, 2011, ADB, 2008). Management contracts are agreements in which a private partner agrees to manage a public service for a certain period (UNESCAP, 2011, ADB, 2008, Honk Kong Institute of Surveyors, 2009). "Brownfield" concession contracts are long term concessions of existing facilities. In this case the private sector undertakes the full responsibility (management, maintenance, possible future investments) of an existing public facility (UNESCAP, 2011, ADB, 2008, Honk Kong Institute of Surveyors, 2009, Pagano, 2010). "Greenfield" concessions are similar to the previous model, but in this case the private sector has to contribute financially in the construction of the facility (UNESCAP, 20011, ADB, 2008, Honk Kong Institute of Surveyors, 2009, Pagano, 2010). In the Joint Venture model, the private and public sectors undertake a business venture and for this purpose they form a corporation which is responsible for its completion and management (ADB, 2008).

The process of PPP implementation consists of three distinct stages. The first one is that of the planning, in the second the negotiations between the public and private partners take place and in the third one the plan is implemented (Deloitte, 2006). During this process, an SPV (Special Purpose Vehicle) is founded by the private partners. The SPV is responsible for completing the project and subsequently managing the facility or providing the service. Among the shareholders are the investors, the private partners and other entities involved in the project, such as the public sector (UNESCAP, 2011, Greek Ministry of Finance, 2006).

In the port sector, the main PPP models used are Greenfield and Brownfield concessions and Joint Ventures (Farrell, 2011, Turpin, 2013). These are usually applied to container terminals, mainly due to the higher profits they offer to the investors. Another reason is that there are concerns about the concession of port services to the private sector, so that limits the available options mainly to cargo related services (Farrell, 2011).

Based on the degree of private sector participation, there are four port ownership models. The public service ports, which are ports in which the public sector holds a dominant role. The tool ports, where the public sector provides all the infrastructure and equipment necessary for the provision of port services, whereas the private sector provides the workforce. The landlord ports, where the private sector is responsible for the management and maintenance of the port facilities, as well as the workforce, while the public sector sets the rules and decides between potential partners. The last ownership model is the fully privatized port. In this case the public sector isn't involved in any way, except for protecting passenger and customer rights and keeping possible monopolistic practices in check (Gaur, 2005, Turpin, 2013).

Examples of PPP in the port sector are the ports of Rotterdam, Antwerp and Hamburg. These are the three busiest European ports in terms of cargo and operate under the landlord ownership model.

The Port of Volos is a corporatized public service port. Its passenger traffic comes mainly from the Sporades islands and cruise passengers during the holiday season and its container and cargo throughput comes mainly from the Thessaly region. Port data indicates that they both saw a rise before the economic crisis and a subsequent fall in recent years. It is also worth mentioning that part of the port area is sublet to private partners for commercial use. This area consists mainly of cafes and restaurants.

2. Method

At first, the services and facilities which would potentially benefit the most by a private sector involvement had to be detected. This was achieved by a combination of survey questionnaires and interviewing. The questionnaires were completed by a random sample of passengers, while the interviews were conducted with key staff of the Port Authority and some of the local travel and port agents. Subsequently, the data was gathered and analyzed using a modified version of the Analytic Hierarchy Process (AHP), originally developed by Thomas Saaty in the 1970s. Finally, based on the results of the aforementioned analysis and already known practices, three potential ownership models were evaluated and compared. These were the current one (public corporation), the commonly used landlord model and the

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