

Airport Business Model

Subjects: Business

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The growth in demand for air transport caused airports to invest in the development of infrastructure and service quality. Therefore, airports, which are mostly owned and operated by governments, shifted to public enterprise management and multi-business companies to become more competitive and profitable. Massive funding was required to refurbish airports and improve their cost efficiency. The airports were tasked with finding managerial instruments to provide a new business model.

Keywords: air transport ; airport development ; airport management ; airport business model

1. Airport Business Model Literature

In contrast to business model definitions, ABM has received less attention in the literature in terms of both conceptualisation and related studies ^{[1][2][3][4][5]}. According to Frank ^[2], the first works describing overall airport operations were those by De Neufville and Odoni ^[6] and Gillen ^[7].

To the best of our knowledge, the only literature containing the keywords 'airport business model' or 'business models for airports' are those from Baker and Freestone ^[8], Frank ^[2], Kalakou and Macário ^[4], Everett Jr ^[9], Efthymiou and Papatheodorou ^[10] and Rotondo ^[1]. **Table 1** presents the current literature on ABM, and the conceptualisations and the findings from the literature that includes the keywords 'airport business model' in their title.

Table 1. Airport business model literature.

Authors	Definition	Aspects of Studying
Baker and Freestone ^[8]	They did not clearly specify, but we can infer that they intended to describe how those airports do business.	The paper compared how two sampled airports from different scales embraced the airport city concept to develop their properties commercially in response to changes.
Frank ^[2]	The business model analyses and depicts the way the firm operates.	The author suggested a structure for airport business models, comprising the customer value proposition, breakthrough rule changing, regulators, key profit formula, stakeholders, governance mix, reform opportunity cost, key resources, key processes, network value, risk and externalities.
Kalakou and Macário ^[4]	An attempt to conceptualise business operations through a model, treating it as an operational tool to improve the firm's performance and revenues.	They explored a new framework for airport business model design by adapting elements from Osterwalder and Pigneur (2010). The authors presented additional building blocks, including the so-called regeneration factor, which includes expected investments and expected returns. The study concluded that high-performance airports shared the same airport business model components.
Everett Jr ^[9]	A business model is part of a business plan. This schematic model provides an overall picture of a firm, and is more comprehensive than other revenue or operating models.	The paper presents the framework for developing airport operations in a changing business environment. Using the example of a small airport in the USA, the author adopted components from Osterwalder and Pigneur (2010) to illustrate the application of the framework.
Efthymiou and Papatheodorou ^[10]	The authors did not give the definition, but we can interpret that it means how airports run businesses under changing environments.	The authors present how airport businesses evolve their operations during different periods of the aviation industry, in response to changing airline business models.

Authors	Definition	Aspects of Studying
Rotondo ^[1]	The author defines a business model using three elements: structure, value proposition and the market.	The study aims to develop a systematic and theoretically founded framework with which to interpret airport business models. It provides a structured and comprehensive examination of strategic methods using an approach to evaluate business models, and demonstrates the application of the concepts using airports in Italy.

In the literature, Baker and Freestone ^[8] explained how Brisbane Airport and Athens Airport adapted the airport city concept to their business operations. Although their work contains keywords relating to the ABM, they discussed something quite far removed from this paper's research objective. In what is similar to Efthymiou and Papatheodorou ^[10], they discussed how airports ran businesses from pre- to post-deregulation, and described how airport businesses apply the concept of the airport city, or Aeropolis, to the operations.

By contrast, Frank ^[2] employed exploratory research using in-depth interviews to examine airport business practices, and proposed different types of ABM for the Talip International Airport (TIA), Mills International Airport (MIL) and Malik Airport (MAK). The author proposed the airport business model matrix, the components of which included customer value propositions, key profit formulas, stakeholder rewards, key processes, network value, and innovation and key resources. She concluded that the ABM design should be heterogeneous in nature, and that it should supply a holistic view of airport operations.

Kalakou and Macário ^[4] used the common Business Model Canvas (BMC) to conduct an analysis of 20 ABMs, because the authors believed that this model captured the overall airport operations as well as the business environment. They found that types and volume of traffic have a high impact on business models; in addition, they further developed Osterwalder and Pigneur's ^[11] analytical framework, with the inclusion of a regenerator factor, which reflected expected investments and returns. The authors agreed with Frank ^[2], that an ABM should not be static, and should reflect present operations for future model development. Moreover, the authors explained that each element in the BMC illustrated the innovative process of airport business modelling. This is because all elements of the BMC affect the new value proposition; it therefore creates innovation building on current airport operations. Everett Jr ^[9] employed the same framework to explain small airport operations in Eastern Pennsylvania, which were operated by Lehigh–Northampton Airport Authority (LNAA). The author employed nine element-building blocks, and holistically described the current operations related to the airport business environment. The author presented the overall operations for the selected airport.

The work by Rotondo ^[1] has recently enriched the ABM literature. In this study, Rotondo ^[1] made a distinct attempt to interpret and provide an ABM framework, by conducting a review of the strategic management and airport-related literature on capturing the environment affecting airport business operations. On the basis of Casadesus-Masanell and Ricart ^[12], he constructed the ABM framework by asking the questions that represent the components underlying the core logic for creating and capturing value. His goal for developing this framework was to assess the Italian airport system. However, Rotondo's ABM framework ^[1] lacks in-depth information from airport management that can potentially be crucial for ABM development.

2. Airport Business Model Components

2.1. Strategic Partnerships

To improve business performance, strategic partnerships should be focused. Airport strategic partnerships, in this sense, comprise business and non-business partners. Most of the key informants agreed that the airport authority should encourage stakeholders to participate in business planning. For example, one of the key informants mentioned the following:

Airport development is the responsibility not only of airport management but also of other parties in the area, such as provincial government agencies, local entrepreneurs, trade chamber organisations, tourism authorities and educational institutions. They can actively work together as partners to develop the airport business beyond being only a transportation platform.

The airport strongly connects with its business partnerships, which creates cooperation among the partners, and pools business resources that enables them to create impressive mega-projects, such as the Jewel Changi Project, in the airport. Moreover, strategic partnerships with the airport dovetail in proposing values to all stakeholders by eliciting

cooperation. The airport holds business meetings with the strategic partners to discuss ongoing and future activities. Even cross-industry partnerships are found in business operations. The airport has developed various channels to communicate with its users. It uses offline and online media to listen to customers/partners' complaints and expectations, in order to equip the airport to respond to their needs.

Besides its business strategic partners, the airport also connects with communities and educational institutions. Strong partnerships among airport stakeholder engagement projects, such as the mentorship for the Saturday Night Lights sport volunteer event programme, the 5-Day job attachment programmes, the hands-on-experience internship programmes, the CAG scholarships, the youth passport programme, and so on, provide major benefits. Such partnership projects create a sense of belonging, and engage the surrounding communities and universities.

2.2. Core Business Activities

According to the in-depth interviews, two sub-keywords under 'airport business activities' were found. The key airport business activities that foster airport performance should be based on business development activities and destination development within an airport. For example, one of the key informants mentioned the following:

If an airport posits itself as a 1.0 airport, then it can be only a transportation platform. But if it develops itself as a destination using the concept of aero marketing for developing its businesses, then it can achieve better operations.

(1)Business development:

Airport managements should provide training for positions involved in airport business development, because budget cuts have put pressure on airport operations. In addition, an airport needs to proactively increase utilisation, by attracting airlines to operate more flights. Since non-aeronautical revenues now play a crucial part in airport revenue generation, an airport should convert available areas into commercial platforms. To efficiently develop airport businesses, an airport needs to listen to stakeholders, and build KP. Public hearings are necessary, because they not only reduce the chances of an airline suffering losses due to abandoned projects, but also make management aware of the expectations and dissatisfactions of all airport users.

(2)Destination development:

To develop airport businesses together with destination development, an airport needs to develop its individual identity. The attractions of destinations near an airport should be researched and promoted. To link the attractions with airport businesses, airport staff should work with provincial authorities and other KP, such as government agencies, communities, airlines, local brands and well-known brands.

This idea from the key informants was consistent with the findings from an extensive review of the World's Best Airport. Singapore Changi International Airport has implemented several proactive strategies to enhance airport revenues through commercial activities, using e-commerce channels to reach out to airport customers. These activities have been developed not only for passengers but also residents, athletes, gastronomes and tourists. These groups of airport users have the potential to increase non-aeronautical revenues. The airport develops the areas effectively by arranging monthly and yearly business and leisure events. The airport turns itself into a destination by way of business partnership collaborations. Projects at the Singapore Changi airport include the HSBC Rain Vortex, the Shiseido Forest Valley, Canopy Park and the Changi Experience Studio.

2.3. Human Resources

Most of the key informants mentioned the importance of human resources, because these resources play a significant role in airport performance development. The sub-keywords put forward by the key experts can be classified as follows:

(1)Skills necessary for airport people:

Working in an airport requires specific knowledge for specific job functions.

However, most workers in an airport lack a solid foundation in airport business, and are unaware of the goals and mind-sets related to airport operations. Some of the management staff may have been promoted from non-airport organisations because of political motivations; therefore, they do not have the relevant background, and do not realise the importance of an airport with regard to social and local economic development. One of the key informants said:

Many of the top management staff still have a perspective that focuses on infrastructure development, despite the fact that the airport business itself is useful in terms of economic aspects.

In addition to having an airport business orientation, management should have skills relevant to business development and aero marketing. At present, the government budget for public airports is declining, and the airports are forced to generate revenues themselves. Hence, skilled airport staff who are motivated to develop the airport businesses and do the marketing are indispensable KR.

(2)Incentives towards their operations:

The structure of the civil servant system has a direct impact on some operational airport staff. Because airport budgets were slashed, some airports have been forced to outsource employment or hire limited numbers of permanent and temporary employees. As previously mentioned, working in an airport requires specific knowledge, especially in positions related to safety and security; therefore, the budget for training is largely spent on temporary employee positions. However, because there are no promotion or salary increments for temporary employees, motivation for employee engagement is almost zero. This lack of motivational incentives results in operational inefficiency.

(3)Manpower planning:

The shortage of human power in an airport is another issue that has been raised. Some airports offer only a few civil servant positions, and hire limited numbers of permanent and temporary employees. This means that some of them are required to work double shifts, which leads to fatigue and inefficiency in airport operations.

Personnel development is a key resource for airport business operations. Although many job functions have been replaced by technological devices, passengers prefer to communicate with other humans rather than communicating with artificial intelligence devices. Therefore, some of the key experts insisted that forming a team that has an airport business and goal orientation is an essential factor in improving efficiency.

Singapore Changi International Airport is administered by the corporatisation of its operations, and human power planning and other relevant human development issues are manageable (Singapore Changi is run by CAG, which is a corporatised company.). The airport focuses on talent pool management. It provides various engagement and training programmes for its staff, and creates an inclusive, open, collaborative and encouraging culture through crowdsourcing, personal development and growth. Moreover, the airport offers scholarship programmes to attract talented young people from local universities. This is to make sure that the airport draws attention and retains a good staff composition.

2.4. Sustainability-Related Projects

Airport operators need to prepare a systematic, well-developed plan for issues related to sustainability. There are several factors and dimensions to be considered. Firstly, a plan should be developed to absorb the necessary expenditure for compliance with laws regarding noise pollution, waste management, carbon footprint and other environmental problems. In addition, airport management needs to consider the potential effects of airport operations on local communities. For example, if airport expansion is being contemplated due to a growth in air travel, then operators are required to address the impacts of an increase in the frequency of flights. Moreover, business operations connected to shared values among airport stakeholders are an important part of improving sustainable business development.

Singapore Changi International Airport itself engaging in several sustainability-related projects. The airport focuses on Sustainable Development Goals (SDGs) in compliance with the United Nations. Such projects include the Singapore Climate Action Plan, and the Singapore Zero Waste and food-waste digester programmes. It also founded the Sustainability Working Group and Changi Foundation to begin corporate social responsibility programmes for airport stakeholders, such as residents and local educational institutions.

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