



## Business models for airports in a competitive environment. One sky, different stories

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### ABSTRACT

Airport reforms have promoted the principle of self-sufficiency which has paved the way for the commercialization of airports. The research has investigated the contemporary business practices in airport management in order to devise a business model for an airport operating in a competitive environment. A business model consists of interlocking elements that when taken together create and deliver value and with which practitioners and academics depict and analyze “the way the firm operates.” The first contribution of this paper is to deliver a matrix of reference reflecting the core dimensions of airport operations which organizes the broad array of business practices into an inclusive structure. The second objective of this paper is to discover if the industry operates with a standard business model or if different sets of practices can be observed in various airports. The business structure of three airports respectively located in Asia, North America and the Middle East has been examined to test the idea of multiple airport business models.

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### 1. Introduction

In the 1980s policy-makers began to turn their attention to reforming airport governance and in many industrialized countries governments started to gradually withdraw from airport management to maintain only their regulatory duties pertaining to security and safety. Public financing of airport infrastructure became increasingly difficult because of the necessity to finance other priority services such as social services. Pressured by an increasing air transport demand and the need for additional capacity along with new airlines' strategies, governments had to find solutions to finance costly airport developments. To meet these demands, many countries commercialized their airports and adopted business-type approaches integrating different degrees of private-sector involvement.

The mismatch between locally-rooted airports and the international outreach of the airline industry forced governments to devise new policies oriented towards competitiveness, profitability and performance to get their airports “on the market.” In the aviation sector, airport business models were introduced in 2003 by de Neufville with the notion of “airport systems” combining physical configuration and operational aspects. Following his observations airports evolved from inefficient monadic activities to systems of

airports which developed into networks serving global markets. Gillen (2009) relates the contemporary airport business model to the changes in the air transport industry such as airline productivity demands and greater infrastructure productivity. This new view constitutes a change in the traditional management of public utility as it introduced a performance culture into ownership and governance practices.

In management science, the concept of business models stems from the New Economy born from the Start-Up generation before it extended to the larger business community. One of the pioneering articles on the subject was put forward in 2000 by Linder and Cantrell (2000) who defined the business model as “an organization's core logic for creating value.” Although there is still no generally accepted definition of a business model, practitioners and scholars use it to describe and explain “the way the firm operates.”

The originality of this paper resides in its exploratory nature as it investigates airport business models as holistic business systems which have received little attention until today. Airport performance and productivity have been extensively researched and typically compare revenue with traffic structure (Oum, Yu, and Xiaowen, 2003), technical efficiency (Pestana Barros and Dieke, 2007), capacity planning (Solak, Clarke, and Johnson, 2009), slot management and congestion (Basso and Zhang, 2010; Condorelli, 2007) and the relation between governance and efficiency (Oum, Adler, and Yu, 2006). Francis, Humphreys, and Fry (2002) took managerial dimensions such as ownership structure, quality management and business excellence into account to study

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the benchmarking of airport performance. As few studies have examined the business structure in its entirety to assess an airport's global output, the business model concept was deemed appropriate in order to capture what matters in the airport business today.

Two central themes are developed in this paper. First, the airport business model builds on a matrix of reference gathering the core dimensions of airport operations in a competitive environment. Second, airports worldwide are endowed with the same mission but vary in terms of scale, function and outreach, and the heterogeneity of these structures is likely to produce multiple business models. Thus, this research is aimed at discussing if the industry operates with a standard model or if the sets of practices observed in various airports shape different business models. Before the three case-studies and their salient features are outlined, the methodology supporting this exploratory field research is presented. The next section then reviews the business model theory and the distinctive attributes of airport operations in order to see if the specifics of the airport industry lead to a sectorized business model. The elements supplied by the case-studies are subsequently analyzed with this theoretical airport business model matrix in order to distinguish similar from diverging business practices. These results will be discussed in the final section to establish whether a standard business model prevails in the airport industry or if several models co-exist as a result of a heterogeneous business environment.

## 2. Methodology

The aim is to delve into three airport reform experiences to investigate business practices implemented to make airports profitable. It is not intended to generalize the results produced by a sample of three airports or seek theory-building, as the state-of-the-art of airport business models research is in its early days. The exploratory nature of this study required an empirical approach and case-studies were deemed relevant for the information that was sought. To collect the greatest variety of practices, the sampling of airports was based on diversification by location and institutional set-up (governance-mix). Once permission was obtained from all airport authorities and Civil Aviation officials, two-week visits were scheduled in each airport. In 2008 and 2009, several rounds of semi-structured interviews with employees from different functions and levels were conducted and a standard questionnaire designed to cover the widest array of business practices and areas of concern was used. Interview time was used to inventory practices and discuss with the interviewees specific issues or aspects the questionnaire did not include but which were critical for the airport business. The content of interviews was supplemented with corporate documents, press clippings and governmental publications to obtain a complete picture of the business system. An analysis of the interview data and company documents enabled the development of a more focused understanding of each airport's accomplishments and challenges. The questionnaire included for instance questions on the airport's *status quo ante* stage, guiding strategy, details on stakeholders identity and *ex post* achievements so as to cover a before to after period. The data collection revealed that profitability and financial information were sensitive topics in the airport industry as well as details pertaining to the strategic alliances established to operate in joint ventures. All names of actors and places are fictitious at the request of contributors who felt that disclosing information could be prejudicial to the relations between the various business partners.

## 3. Business model theory

A business model can be best understood as interlocking elements that when taken together create and deliver value (Johnson, Christensen, and Kagermann, 2008; Linder and Cantrell, 2000; Verstraete and Jouison-Laffitte, 2009). This concept underpins two major preoccupations: 1. Who is the customer? How do we make

money in this business? How can we deliver value to customers at an appropriate cost? (Magretta, 2002) 2. How to create value out of the bundle of resources possessed by the company? Ness and Brechin (1988) refer to the concept of "organizational technology" which is broadly defined and includes not only the machines and other hardware organizations use to achieve their ends, but also the skills, knowledge, training of employees; the approaches, strategies, and procedures utilized; and even the characteristics of the objects (inputs and outputs) on which work is performed (p.256). Miller (1998) added "configuration" to technology as a distinctive feature to explain the firm's performance through "the degree to which an organization's elements are orchestrated and connected by a single theme." Chesbrough (2003) observed that the utility of the business model lies in its capacity to convert technical decisions into financial returns. The literature offers several representations of business models including various components from which were extracted the following seven consensual axes:

1. Customer value proposition defines the job to be done to solve a problem, fulfills an important need for the target consumer or capitalizes on market power. Lindgart, Reeves, Stalk, and Deimler (2009) looked at this proposition from another standpoint: "what compromises does our business model force customers to make? Why are nonusers or defectors dissatisfied with our offering?"
2. Key profit formula estimates the returns of the revenue model, the cost structure, the margin model and the resource velocity. Linder and Cantrell (2000) observed that today's customers are more educated and more demanding, experimenting new ways to do business, not all of which have a positive impact on margins.
3. Stakeholder rewards predict compensation of all actors involved and more specifically money-suppliers.
4. Key resources encompass valuable assets possessed by the firm such as people, technology, products equipment, information, partnerships and brand. The value of the firm's tangible and intangible assets was put forward by Edith Penrose in 1956 in her seminal work giving birth to the Resource-Based Theory. This theory established the relationship between resources and a competitive advantage.
5. Key processes explain the value created out of the organization of activities including processes, traditions, norms, routines and metrics.
6. Network value refers to the output of working with other players to influence a new industry and can be decisive in building up a competitive advantage (Linder and Cantrell, 2000). According to Morris, Schindehutte, and Allen (2005), positioning within a value network can be a critical factor in value creation.
7. Innovation/breakthrough: Johnson et al. (2008) stated that innovation is a major constituent of the business model and recommend capitalizing on a game-changing opportunity to increase profitability.

Several representations and constituents of business models can be found in the literature but it was observed that the above seven building blocks tend to reflect a consensus among scholars. Nevertheless, the specifics of air transport operations suggest that there is more to the airport business model than these seven building blocks. Airport operations are subject to other considerations such as the power of regulators, governance-mix, risk management and externalities. As a result, it was decided to include them in the airport business model to reflect the core dimensions of airport management.

## 4. Airport industry's peculiarities

Traditionally, airports used to view airlines as their primary customer because airlines have historically been their main source of income. Airport revenue stems from two types of income: 1. aeronautical revenue arising directly from the operation of the aircraft, the

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