Journal of Air Transport Management 57 (2016) 155–167

Contents lists available at ScienceDirect

Journal of Air Transport Management

journal homepage: www.elsevier.com/locate/jairtraman

An assessment of delivery changes for UK terminal air navigation services

Ian Thompson [a, *], Richard Pech [b], Kok Boon Oh [a], Timothy Marjoribanks [a]

[a] School of Business, College of Arts, Social Science and Commerce, La Trobe University, Victoria, 3086, Australia
[b] ICAM, Pekan, Malaysia

ARTICLE INFO

Article history:
Received 14 October 2015
Received in revised form
19 July 2016
Accepted 24 July 2016

Keywords:
Air traffic control
Airports
Birmingham airport
Competition
Five forces
Gatwick airport
Heathrow airport
NATS
Porter
Strategy
TANS
Terminal air navigation services

ABSTRACT

In order to meet government contestability policy ambitions, the United Kingdom Civil Aviation Authority (CAA) has undertaken a range of initiatives to create a competitive market for terminal air navigation services (TANS). This paper examines the critical dynamics underlying recent TANS service delivery changes at the nine United Kingdom airports that fall within the Single European Sky performance scheme (SES) using industry data and Porter's five forces model. Interviews with CAA, NATS and airport operators, along with publically available material, are used to explore the various elements impacting competition for TANS at these airports. Competition is intense among a very small number of companies. In addition to optimizing service cost, airport operators require greater value for money including alignment to strategic-operational goals, closer integration with other airside functions and payment structures that are performance based. Gatwick and Birmingham airports changed service provisions due to concerns about the value for money proposition offered by NATS Services Ltd (NSL). This paper also illustrates how competition has changed the customer orientation of NSL. It has been forced to evolve quickly from an expensive, perceived as somewhat arrogant, organisation to one that must be capable of aligning to the cost and service requirements of its customers. Importantly for the ATM industry this paper provides evidence that competition drives lower service costs and provides greater value for money for airlines and airport operators.

1. Introduction

The air traffic management (ATM) industry globally is under government and airline pressure to improve its operational effectiveness while at the same time reducing service delivery costs. Within Europe, the European Commission (EC) has established the Single European Sky (SES) performance scheme to provide a legislative framework to address these issues. The SES performance scheme requires that each member state achieves service performance and cost efficiency targets.

The United Kingdom Civil Aviation Authority (CAA), as the designated National Supervisory Authority (NSA) for the United Kingdom, is required to establish national targets and plans to meet EC goals for the delivery of air traffic services (ATS). These UK obligations under the SES are addressed in two ways. First, for monopolistic en-route services, it involves having the ATM service provider achieve performance improvements plus a 3.3% per annum real cost reduction during the period 2015 to 2019. This comprises a cost reduction of 2.1% per annum, with a corresponding increase in traffic of 1.2% per annum.

The second initiative is to achieve contestability in the domestic market for terminal air navigation services (TANS). UK airports with more than 70,000 instrument flight rules (IFR) movements annually fall within the SES performance scheme. In the absence of a competitive market CAA is required to establish cost efficiency targets for TANS at these airports. A report conducted by CAA into the competitive environment for UK TANS concluded that market conditions did not exist (CAA, 2013). As a consequence, CAA set a cost efficiency target of 2.3% per annum in TANS service delivery between 2015 and 2019 (CAA 2015a, 2015b, 2015c). There is no obligation to impose market contestability in order to achieve this cost efficiency target. (CAA 2015a, 2015b, 2015c), in a subsequent report, found that market conditions now exist for TANS. This means that the cost efficiency target is no longer required.

In the past, NATS Services Limited (NSL) was the sole provider of

* Corresponding author.
E-mail address: ithompson@thompsongcs.com (I. Thompson).

http://dx.doi.org/10.1016/j.jairtraman.2016.07.016
0969-6997/

TANS at the nine UK airports that fall under the SES performance scheme. Recently Gatwick Airport Ltd (GAL) awarded its aerodrome control service to Air Navigation Solutions Ltd (ANS), the United Kingdom subsidiary company of Deutsche Flugsicherung Gmbh (DFS), the German ANSP. Birmingham Airport Limited (BAL) also decided to self-supply its TANS service. BAL commenced its self-supply service on 1 April 2015, while the ANS service at Gatwick commenced on 1 March 2016. (CAA 2015a, 2015b, 2015c) concludes that these changes in service delivery provide evidence that market conditions for TANS have been created.

This paper provides insights into the underlying structure of the TANS market in the United Kingdom at the nine airports which fall within the SES performance scheme. In particular it examines the competitive pressures that are impacting NSL, the long term supplier of these services. It also critically examines the existing competitive market for TANS and whether this will foster competition, the desired service delivery, and cost reductions. Porter's five forces model is used to provide an effective framework for this analysis. Outcomes from the creation of a competitive market for TANS in the United Kingdom will be monitored closely within Europe and elsewhere, thereby providing an important justification for this paper.

Porter's Five Forces model has been chosen for this paper since it is the most widely used framework for analyzing competition (Grant, 2016 p68). It provides a structured framework to analyse the various competitive elements that influence TANS service delivery. Although the five forces model presents a somewhat static picture of the competitive market, it enables analysis of the TANS industry at these nine UK airports as service delivery alternatives to NSL are adopted for the first time.

This is the first academic paper exploring the competitive market conditions for TANS at the nine largest United Kingdom airports. The analysis contained in this paper, based on Porter's Five Forces model, provides the foundation for other researchers to explore the efficacy of CAA initiatives to create competition. It also provides a foundation for determining how the forces impacting the competitive environment have changed over time.

Data for this paper has been obtained from:

1) Publicly available publications, particularly studies undertaken by CAA for the Department of Transport about the market conditions for TANS; and
2) Interviews undertaken with senior representatives from CAA (3), NATS (3), Gatwick Airport Ltd (1), Birmingham Airport Ltd (1) and Heathrow Airport Ltd (1). These interviews took place between March and May 2016.

Interviewees were selected purposively due to their direct involvement in the TANS service changes. Interviews were semi-structured and were recorded and transcribed. The data was then analysed thematically. Fieldwork was approved through the relevant ethics process, with the main consideration being the confidentiality of participants.

The paper begins by presenting the operational context of TANS within the United Kingdom air traffic management industry. An overview of the operational and commercial context of NATS is then provided. We then explore the competitive structure of the United Kingdom TANS market analyzing each of Porter's Five Forces. The paper concludes by providing strategic implications from this analysis.

2. Operational context

Air traffic control operations can be categorised into three areas, namely, aerodrome, approach and en-route control (CAA 2015a, 2015b, 2015c). Aerodrome control provides services to aircraft landing and taking-off at an airport and manoeuvring on the ground. It generally extends for 10 nm around an airport and up to 4,000 ft above the ground.

Approach control sequences aircraft for arrival at an airport, and assumes responsibility from aerodrome control for departing aircraft. The approach service for a number of airports can be combined and undertaken from a centralised facility. An approach control service could extend for up to 40 nm from an airport.

The third operational area is en-route control. It provides air traffic control services to aircraft during the cruise phase of flight before and after approach control functions. These en-route services are provided from centralised air traffic control centres.

A single air navigation service provider (ANSP) normally provides en-route control within civil airspace of each country. In countries where the commercialised delivery of ATM takes place, en-route control is legislated as a statutory monopoly. Commonly each country imposes regulatory controls to ensure that this monopoly position is not abused by the ANSP in the setting of user charges.

Most countries extend the monopoly provision of air traffic control to approach and aerodrome control service areas. Australia, for example, includes the approach and aerodrome control under the statutory service monopoly performed by Airservices. Airservices is an Australian government owned ANSP. Charges are negotiated between Airservices and its airline users. Airports are not involved in charging airlines for aerodrome and approach services. There is no contract for service between the airport operator and Airservices for the provision of TANS services.

Some countries, however, have created a regulatory environment that enables competition to take place in the delivery of these services. Spain has deregulated its aerodrome control services in order to lower air traffic controller costs, which until recently were considered to be the highest in Europe (CAPA, 2011b). In this case the TANS supplier contracts with the airport operator for these services. The airport operator, in turn, charges airlines for the TANS service.

Unlike many countries, United Kingdom approach and aerodrome control services have never been subject to a statutory monopoly (CAA 2015a, 2015b, 2015c). The term terminal air navigation services (TANS) is used to describe these services. Of the 128 licensed aerodromes in the United Kingdom, only approach control services provided for the five London airports are part of the statutory monopoly encompassing en-route services. The charge to meet the cost of London approach control service is negotiated between NATS En-route Ltd (NERL) and airline users.

Airport operators negotiate the cost of aerodrome and/or approach control service provision with the TANS supplier. The airport operator then passes these charges, or a portion there-of, to airline users as part of the overall airport charge. This means that some airport operators might subsidise the cost of TANS provision, should they choose.

In 2013 there were 62 organisations certified to provide TANS in the United Kingdom (CAA, 2013). NSL provides services at 14 locations (NATS Holdings, 2015).

TANS at airports that exceed 70,000 IFR movements annually fall within the SES performance scheme. This is based on aircraft movement statistics for the previous three years. (CAA 2015a, 2015b, 2015c) determined that nine airports exceeded this movement threshold and fall within the SES performance scheme.

Table 1 below presents a summary of each of the nine airports in descending order of IFR traffic movements. It also notes whether the airport is subject to economic regulation and the incumbent TANS supplier.

European Union (EU) Common Charging Regulation (391/