Journal of Transport Geography 31 (2013) 72–83

Contents lists available at SciVerse ScienceDirect

Journal of Transport Geography

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

Air transport in Africa: toward sustainable business models for African airlines

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ARTICLE INFO

Keywords:
African
Airlines
Business models
Sustainability
Connectivity

ABSTRACT

Although there is a vast amount of literature on airline business models and their evolution in changing global landscapes, there is a general lack of research into the applicability of those models, traditionally defined in European and North American contexts, to the African scene. Implicit in this study is the hypothesis that the African environment is unique enough to warrant its own host of strategies, which may be distinctive enough to form part of a new strategic template, or business model. Initially, a review of existing literature is undertaken to profile the African aviation environment and evaluate existing airline business models and their evolution, both globally and in Africa. The methodology consists firstly of a cluster exercise, whereby 57 African airlines are analysed in terms of their network and size, to yield a number of heterogeneous groups which serve to identify the current business models of airlines on the continent. Following this, eight airlines (representative of the groups outlined in the cluster analysis) were subsequently selected for analysis in terms of the Product and Organisational Architecture framework. While it was evident that the traditional models are followed in Africa, in some instances variations were apparent. Full-service network carriers and regional carriers were concluded as being the most prominent and stable in the African market. The applicability of the low-cost carrier model in Africa was also examined at length, with mixed results. The analysis also raised network density and connectivity as essential components of business models for delivering profits in an African context.

1. Introduction

> "The pursuit of sustainable profitability and competitive advantages has been changing different business models over the last decades." (Herszenhaut, 2010, p. 7)

The operating environments in which airlines find themselves are far from homogeneous. The diversity of policies, geographies and economies across the world imply a need for a set of bespoke strategies, which can be represented in broad templates or business models designed to respond to the challenges presented by specific operating environments. This paper will aim to examine the most sustainable of such business models in the African context, by first identifying the current business models pursued by airlines on the continent, followed by a study of their sustainability from 2 key perspectives: market presence and Product and Organisational Architecture (as used by Mason and Morrison (2008)).

Although there is a vast amount of literature on airline business models (Bieger et al., 2002; Tretheway, 2004; Graf, 2005; Gillen and Gados, 2008; DLR, 2008; Jarach et al., 2009; Doganis, 2010) and their evolution in changing global landscapes, there is a general lack of research into the applicability of those models to the African environment. Implicit in this research is the hypothesis that the African environment is unique enough to warrant its own host of strategies, which may be distinctive enough to form part of a new strategic template or business model. In the context of African aviation, chief bodies of research centre on the impact of liberalisation on the continent (Chingosho, 2009; ICAO, 2003; Morrison, 2004; Schlumberger, 2010; United Nations Economic Commission for Africa, 2001), with limited reference to the evolution of airline strategies in response to these developments. Other salient research on African aviation has focussed on the challenges posed by the African operating environment (Abeyratne, 1998; Chingosho, 2009; Ssamula, 2009), but no explicit link is made to any recommendation on suitable strategies for African airlines to overcome such challenges. A whole range of problems persist in Africa that include: high costs; poor safety; government interference; corruption; low productivity and overstaffing; old aircraft; sparse demand over long sectors; low load factors; strong travel agent networks that operate in a cash economy; last minute booking profiles; low internet penetration; skills shortage; and difficulty in obtaining Air Operating Certificates (AOCs). These are all threats that need to be mitigated by African airlines if they are to remain economically sustainable, and will shape any conclusions

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http://dx.doi.org/10.1016/j.jtrangeo.2013.05.004

on sustainable business models on the continent. Over the last decade, 37 airlines have launched in Africa and 37 have failed (Kamara, 2012) – the problems facing the aviation landscape within Africa are extensive.

2. Commercial aviation in Africa: a brief overview

Africa accounts for just 2% of the world's air transport traffic in terms of passenger kilometres flown, despite this, the continent has the highest accident rate, with African carriers representing 23% of the western built jet hull losses in 2010, which is a manifestation of the ongoing issues (IATA, 2010). This has contributed in forcing many passengers to switch to international carriers as Ethiopian Airlines CEO stated that 80% of the African traffic is flown by non-African carriers (Dunn, 2012), while in Nigeria the situation is considerably worse as 98% of its traffic is carried by non-African carriers (Thomas, 2013). Research by O'Connell and Warnock-Smith (2012) revealed that Egyptair's overall share of international trips to/from Egypt just marginally increased from just 13.3% in 2007 to 15.7% by 2009 – many of the passengers were Egyptian residents, indicating the difficulty in attracting foreign passengers to travel with African based carriers. This scenario has compressed the output of the continent as AirportIS data computes that 80% of Africa's capacity is carried by just 20% of the domiciled carriers. The Yamoussoukro declaration – the blueprint for liberalising African airspace has been implemented within the continent's Regional Economic Communities (RECs), but to varying extents, thus leaving its continent-wide implementation fragmented and heterogeneous. There are 40 cities in Africa with populations of more than one million people and the Yamoussoukro agreement will likely be the catalyst for widespread connectivity, like that seen in the US and Europe after deregulation. The African environment presents a unique set of challenges that are unique to its environment that principally include high costs, poor aircraft utilisation and sparse demand.

African carriers face higher costs than their counterparts in other parts of the world. Fuel for example needs to be transported over long distances as a quarter of countries on the continent are landlocked – a problem exacerbated by poor infrastructure. The fleet size of most of the African carriers lack sufficient scale to negotiate favourable rates with fuel suppliers, while the practice of fuel hedging is not endorsed leaving African airlines exposed to volatile price fluctuations. Distribution is another constraint akin to Africa as low internet and credit card penetration rates force airlines to incentivise travel agents – Chingosho (2009, p. 32) states that commission payable to travel agents is typically about 7% of the ticket price. Furthermore, African service providers such as airports and navigational service providers are typically government-owned monopolies and consequently are all higher in Africa than the rest of the world –to land a 200 tonne aircraft on a runway (including taxiway charges) in Johannesburg and Nairobi for example is around $2,500 and $1,500 respectively, while London Heathrow is considerably less at $500 (IATA, 2010). African carriers have some of the oldest fleets in the world with 80% of all aircraft registering over an age of 10 years or older; this in-turn triggers higher associated maintenance costs, increased fuel consumption, poor reliability and increased downtime. Aircraft utilisation rates in Africa remain among the lowest in the world with rates averaging just 6.9 h per day compared to Europe with 9.9 (Chingosho, 2009) – this is attributable to poor scheduling, night flying restrictions, extended downtime of aging aircraft and a shortage of flight and maintenance personnel. African airlines also operate to the most destinations per aircraft when compared to other carriers across the globe. This is a reflection of poor aircraft usage with too many destinations being served by too few aircraft based on the need of state-owned airlines to be present in more markets than their fleet sizes can accommodate, often as a matter of 'market presence' coupled with national pride. Another focal challenge that African airlines must overcome is sparse demand, specifically on intra-African routes. This is a direct result of high airfares on the continent, which are a general symptom of the general lack of competition on intra-African routes as well as the inequality of income across the continent as air travel remains a luxury – even leisure travel is deemed inelastic (elasticity of 0.53) (Abrahams, 2002; Chingosho, 2009; Irandu, 2006; Schlumberger, 2010; Ssamula, 2008, 2009, 2012). This sparse demand on African routes can be seen in the continent's low load factors at 69.7% in 2010, which positions it at bottom of the world's league table, while the world's average rests at 75.2% (IATA, 2010). Despite such challenges, the potential of the African aviation market has never been in doubt,[1] but the continent's carriers have so far struggled to tap this opportunity. Titus Naikuni, the current Kenya Airways CEO, summarises the potential for aviation in Africa succinctly, "Africa is the world's second largest continent with a population of 1 billion; this is comparable to China's and India's. Yet it is having difficulties communicating with itself – even by telephone. Roads are not good and railroads are not good, so you need air transport. The potential is big" (Buyck, 2010, p. 33). The development of a network suitable to the high costs and sparse demand in the African markets, will go a long way to developing an overall sustainable business model.

To understand the potential for growth of air transport in Africa, it is important to develop a picture of the continent's main economic and social characteristics. As alluded to earlier, the high concentration of air transport development in a few regions is a reflection of the continent's concentrated economies and populations in those regions, shown in Table 1.

In Africa, there is clearly a partial alignment between size of population, economy and air traffic. In general, countries with large populations and economies or small but rapidly growing populations and economies, represent an opportunity for the development of strong domestic (and/or international) networks (Chingosho, 2009).

3. Methodology

The methodology employed in this study, as summarised in Fig. 1, adopts a reductive, step-wise approach. As the scope of the study reduces, the level of detail in the data increases. Initially, 57 African airlines (observed from a review of OAG data[2] for all airlines in Africa) were examined, with relatively few data metrics, to identify the current business models pursued on the continent. Following this, and where data permits, a smaller sample of airlines is examined in terms of their Product and Organisational Architecture (POA), which, when combined with the analysis on the identified business models, yields conclusions on the most sustainable business model.

Research by Mason and Morrison (2008) used the Product and Organisational Architecture (POA) to provide a meaningful platform on which to base a comparative analysis of airline business

[1] Africa's natural resources will continue to attract extractive industries and the capital-intensive nature of these industries will ensure they remain high in the rankings of sectors drawing Foreign Direct Investment. African governments generated US$415 billion in 2012 from taxes, licences and permit fees pertaining from oil and mining operations, up from $141 billion in 2000. This trend is set to grow exponentially into the future (Global Market Information Database, 2013). There are an estimated 127.7 billion barrels of oil in sub-Saharan Africa, an equivalent of approximately 9.6% of the globe's total proven reserves (Gismatullin, 2011).

[2] OAG holds historical flight details for more than 1000 airlines and over 4000 airports. The aggregated data feeds the world's global distribution systems and travel portals, and drives the internal systems of many airlines, air traffic control systems, aircraft manufacturers, airport planners and government agencies around the world.