SUSTAINABLE BUSINESS MODELS FOR THE STATE-OWNED AFRICAN AIRLINES

B Ssamula,
CSIR Built Environment, P. O. Box 395, Pretoria 0001

ABSTRACT

The entrance of the low cost carriers' business models has been widely praised for challenging several inefficient airline business practices. However, currently business models of both traditional carriers and low cost carriers worldwide are being tested through the global crises. In the current operating environment, many "legacy" airlines worldwide have implemented extreme financial and operational measures to stay afloat. The costs of operating airlines are getting higher while the revenue bases are shrinking. The aim of this paper is to assess the current state-owned airlines in Africa. It will highlight some of the inherent weaknesses and identify elements within their operational models that can improve their sustainability. Some of the elements that will be analysed vary from growing the network though mergers to investor funding models for capital, etc. The survival and sustainability of African airlines within today's aviation market lies in their ability to operate cost effectively and prudently to adopt low risk capital and operational business models.

Key words: airline economics, business models, state-owned airlines, African airlines

1. INTRODUCTION

In recent years the civil aviation industry has witnessed rapid corporate, structural and operational changes enabling it to be described as one of the fastest changing sectors within the transportation industry. This unparalleled development in the civil aviation industry has been the result of external rather than internal forces. In the current operating environment, many "legacy" airlines worldwide have implemented extreme financial and operational measures to stay afloat.

1.1. Background

Doganis (2001) reiterates that the Airline industry is inherently unstable because it is an industry constantly buffeted by new developments and constraints. The evolution of the civil aviation industry can be broken down into four major stages as summarised in Table 1. As the industry grew and took shape, some of the biggest changes in the industry have changed the way the industry grows and operates. The entrance of the low cost carriers' business models has been widely praised for challenging several inefficient airline business practices. However, currently business models of both traditional carriers and low cost carriers worldwide are being tested through the global crises.

Table 1: Stages in the development of Commercial Air Transport

Year	Stage	Characteristics
1990	Stage 4	**Network and alliances**: consolidation stage, importance of airports, system of world alliances, network management, low cost carriers
1973	Stage 3	**Quality and cost**: deregulation, open sky policy, new price structures, new types of service, new entrances with new business, Cost efficiency, hubbing
World War II	Stage 2	**Political: fast progress**: international standards for air transport regulation, bilateral agreements between countries, financial power, route networks
1925	Stage 1	**Technical**: adventurous form of transport, hardly any airlines profitable, supply side of business

(Source: Beiger et al, 2002)

1.2. Airline business models

Various airline business models have developed over the years, in order to compete and survive in the industry. Each of these models is characterised by several strategic factors that are crucial for their success as will be explained. Table 2 summarises these factors according to business model.

Table 2: Strategic business factors for airline models

Network Carrier	Regional carrier	Low Cost Carrier(LCC)	Charter Carrier
Network Effects	Niche markets	Simple processes	Intergeration in tour operator value chain
Hubs	Low cost routes	Niche markets	Capacity management
Growth and market share	Flexibility	Marketing	
Coo-operation to build global links			

(Source: Beiger et al, 2002)

- The global network carriers/Full Service Network Carriers (FSNCs) are airlines that offer hub and spoke network structures offering a wide range of routes and lowering costs through the consolidation of passengers to and from their hub. The hub is usually located at their base/home airport. These carriers over the years have consolidated through so-called strategic alliances into a limited number of fiercely competing networks, both in passenger and in freight transport. (Tretheway, 2004) The competitive edge of these carriers is the availability of connections, thus liberalisation and free entry markets greatly benefit these carriers.

- Regional carriers have been sustained in many ways, marketing themselves either as feeder carriers for larger network carriers to serve and feed the spokes and hubs, or as niche players exploiting market opportunities that presented themselves because of geographic characteristics, for instance by operating strongly from small regional airports (Bmi midlands) or all business class airlines (e.g., executive jet airlines) and express freight transport (e.g., DHL, Federal express).

- The LCC business model is based on strict adherence to a number of principles, namely, short-haul, point-to-point, dense routes, maximisation of flying hours, use of secondary airports, high frequency of service, no delays, quick turn-around. It strove to combine low costs, low fares and high demand and capacity utilisation (Meersman et al., 2008).

- Charter carriers business model which offer unscheduled transport services for passengers on request. These businesses are commonly offered by establishments primarily engaged sightseeing services, access to tourism destinations, air taxi services, and helicopter passenger transportation services to, from, or between local airports, whether or not they are scheduled.

As the 21st Century dawned, it became clear that the business model of the network airlines was broken. Airlines were no longer able to sustain a revenue base which could cover the traditional cost base and also include an allowance for an adequate rate of return on invested capital. (Hansson et al, 2002) The problems and the ability of the traditional network air carrier business model to cover costs were known during the late 1990s. However, the tragic events of 11 September 2001 produced a shock to the industry that exposed inherent structural and operational inefficiencies and the required financially prohibitive infrastructure to run their business (Tretheway, 2004). The industry that had the highest costs and hence suffered the most was the traditional network carrier and hence is the focus of this paper.

State-owned airlines are defined as airlines that are owned wholly or partially by their national government. Historically, this situational rose because of the high capital intensive nature of the business and because of the significance air transport was expected to have, in economic and social development of states. Doganis (2001), states that the regime of bilateral air service agreements that were negotiated at government level also played a significant role in how the country's image was portrayed in terms of service efficiency, safety and security, and governments ensured that through setting up a national flag carrier.

1.3. Problem statement

The African aviation industry has faced many problems over the last three decades; the extent of these problems is due to the fact that this industry is very dynamic and its rules and regulations are standard worldwide.There is also increasing pressure especially for state-owned airlines in Africa to improve their operational efficiency and profit levels in an environment characterised by calls for privatisation, rationalisation through alliances with foreign airlines and increasingly stringent operating, environmental and economic regimens. Therefore, the authors argue that the foremost challenge for these African airlines is to find and adopt a sustainable business model. This model is expected to enhance operations and revenue generation and sustain growth in an environment that has witnessed profitable airlines running at a loss in the current global crisis.

The aim of this paper is to review the state of current state-owned airlines in Africa. It will highlight some of their inherent weaknesses and from them propose elements within their operational models, that can improve their sustainability. Information pertaining to ownership and current state of all state-owned airlines in Africa will be collected, presented and analysed to identify these weaknesses. Recommendations as to changes within the airline business model that have proved successful for other airlines will be highlighted.

2. OVERVIEW OF AFRICA'S STATE-OWNED AIRLINES

The table below lists the African airlines that have some sort of government control and the current operational state shows that of the 52 state owned airlines that have existed in Africa,

Table 3: State-Owned Airlines in Africa

Country	Airline	% Gov't ownership	Current state
Algeria	Air Algerie	100%	Operating as a joint stock company
Angola	TAAG Angola	100%	Currently blacklisted by the EU
Benin	Air Benin	100%	Defunct airline
Botswana	Air Botswana	100%	Partial privatisation, originally expected in 2004, has been delayed.
Burkina Faso	Air Burkina	>50%	56% owned by Aga khan development Network
Burundi	Air Burundi	100%	ceased operations in 2007
Cameroon	Cameroon Airlines	96.43%	Co-owned by Air France 3.57%
Cape Verde	TACV-Cabo verde airlines	100%	It became a public company in 1983 and it currently being prepared for privatistaion
Central African Republic	Centrafrican airlines		Defunct Airline
Chad	**Toumaï Air Chad**	100%	Operational
Democratic rep of Congo (DRC)	Congo Airlines	100%	It joined with Zaire Airlines and Zaire Express to become Hewa Bora Airways.
Comoros	Air Comores International	60%	Ceased operations in 2006. co-owned by Air Bourbon (40%)
Djibouti	Air Djibouti	100%	Defunct
Egypt	Egyptair	100%	Africa's second largest airline. Part of the start alliance network
Equatorial Guinea	Ecuato Guineana	100%	Currently on the EU blacklist
Eritrea	Eritrean airlines	100%	Established in 1991
Ethiopia	Ethiopian	100%	Operated with a USD 56 million profit in the fiscal year 2007/08
Gabon	Air Gabon	>50%	airline ceased all operations on March 3, 2006 due to financial difficulties
Gambia	Gambia International airlines	99%	Co-owned by Gambia telecommunications (1%). The airlines does not have scheduled service to any destinations, planes are now being used by Futura International Airways.
Ghana	Ghana Airways	70%	It is owned by the Ghanaian government (70%) and US consortium (GIA-USA) (30%) and has 168 employees (at March 2008)
Guinea	Air Guinee	100%	The airline was established 1960 by the Guinea government and was restructured in 1992 to improve profitability. However, the airline never recovered and its operations were taken over by Groupe Futurelec under the name Air Guinee Express
Guinea Bissau	Guinea Bissau Airlines	100%	Operational
Ivory Coast	Air ivoire	51%	Co-owned by Air France and AIG
Kenya	Kenya Airways	23%	The airline is co-owned by individual Kenyan shareholders (30.94%), Air France-KLM) (26%), Kenyan institutional investors (14.2%), foreign institutional investors (4.47%) and individual foreign investors (1.39%). It became part of the sky team in 2007
Lesotho	Lesotho airways	100%	On October 1st 1996, Lesotho Airways had to suspend its international flights due to the inability to satisfy the minimum requirements specified by the Department of Civil Aviation. In 1997, Rossair Contracts Private Ltd acquired the assets of Lesotho Airways as it was financially insolvent.
Liberia	Air Liberia	100%	Operated government VIP operations. Ceased operations in 1990
Libya	Afriqiyah Airways Libyan Arab Airlines	100%	Libyan Airlines and Afriqiyah Airways, together with business jet operator United Aviation, and their handling, maintenance and catering companies, have recently been grouped under Libyan African Aviation Holding Company.
Madagascar	Air Madagascar	90.6%	The airline is co-owned Société Nationale de Participation SONAPAR (4.85%), Air France (3.17%), Assurances Ny Havana (0.62%) and employees (0.77%)

Country	Airline	% Gov't ownership	Current state
Malawi	Air Malawi	100%	Air Malawi was established by Act of Parliament and started operations on 1 September 1967. On 10th September 2008 it was announced that there were plans for the Malawi government to sell Air Malawi off to Comair the British Airways franchise partner
Mali	None	N/A	N/A
Mauritania	Air mauritanie	>10%	In October 2007, however, the airline was liquidated after it was unable to pay the leases on two of its aircraft, which were repossessed by leasing company ILFC. The government of Mauritania is now attempting to establish a new airline, Mauritania Airways, in conjunction with Tunis air and a local company.
Mauritius	Air Mauritius	>50%	In 1995 the airline was listed on the stock exchange of Mauritius. The airline is owned by Air Mauritius Holding (51%), publicly held (19.97%), Port Louis Fund (6.32%), the State Investment Corporation (4.72%), government of Mauritius (4.53%), Rogers and Company (4.28%), British Airways (3.84%), Air France (2.78%) and Air India (2.56%)
Morrocco	Royal Air Maroc	95.95%	The Moroccan government owns 95.95% of the airline and Air France 2.86%. The government intends to partially privatise the airline through the sale of a 25% holding.
Mozambique	LAM-Air Mozambique	100%	The State holds 80% of the shares of LAM and employees hold the remaining 20% of the shares
Namibia	Air Namibia	>10%	The government of Namibia acquired majority shareholdings in 1982 making it the national airline in 1987.
Niger	None	N/A	N/A
Nigeria	Nigeria Airways	100%	The airline ceased operating in 2003. It had accumulated significant debts.
Rwanda	Rwandaair express		established in 2003 as a joint venture between the Rwandan Government (77%) and Silverback Cargo Freighters (23%).
Sao Tome & Principe	Air Sao Tome & Principe	35%	The airline was established 1993. It was owned by TAP Portugal (40%), Mistral Voyages (1%). It lost it's only aircraft in an accident in 2006.
Senegal	Air Senegal International	75%	It is part of Groupe Royal Air Maroc, who own 51% of the company shares, with 49% being held by the Senegalese government.. In 2007, the Senegalese government raising its stake to 75%
Sierra Leone	Sierra Leone airlines	<100%	Co-owned in partnership with with Alia/Royal Jordanian Airlines,
Seychelles	Air Seychelles	100%	It is also the major ground handling agent for all aircraft operating at Seychelles International airport.
Sierra Leone	Sierra National Airlines	100%	Currently inactive due to financial constraints. South African based aviation company, who have proposed to take over the operations but government held up the process
Somalia	Somali airlines	51%	49% co owned by Alitalia. The political unrest in Somalia led to the cessation of all international flights at the beginning of 1991 and all operations ceased at the end of 1991.
South Africa	South African Airways	100%	Established in 1934, when the South African government acquired the assets and liabilities of a private airline, Union Airways. On 1 April 1999, SAA ceased to be a division of what had by then become Transnet (state owned enterprise) and was incorporated as a company in its own right, South African Airways (Pty) Limited. SAA Bill was passed by Parliament as the South African Airways Act No 5 of 2007
South Africa	South African Express	100%	Established as a regional carrier for SAA at its hubs. Currently undergoing sale from Transnet as a company in its own right. SAA Bill was passed by Parliament as the South African Airways Act No 34 of 2007
Sudan	Sudan Airways	30%	In 2007, the Sudanese government privatised 70% of the airline
Tanzania	Air Tanzania	100%	Tanzania's civil Aviation authority has currently suspended its flights, due to no compliance
Togo	None	N/A	N/A
Tunisia	Tunis Air	>50%	Co-owned by Air France
Uganda	Uganda airlines	100%	Ceased operations in 2001.
Zambia	Zambian Airways	100%	In 1992, the government reportedly indicated that the airline would be responsible for its own debt services and had to operating expenses from its own revenues. Under this directive and in a worsening economic climate, the airline very quickly scaled back both domestically and internationally, and was liquidated in 1995
Zimbabwe	Air Zimbabwe	100%	Struggling financially due to fewer passengers and escalating inflation in Zimbabwe

(Sources: Doganis (2001), Airline websites, etc)

2.1. Weaknesses in sustainability of state-owned African Airlines

In addition to their intrinsic weaknesses within the airline industry which include high capital costs and low profit margins, African airlines face various challenges operating commercially viable air transport services on the continent. A summary overview shows that;

I. State owned airlines may often suffer from interference from certain government departments that do not make profitability a priority(Doganis, 2009); African carriers suffer from under-capitalization and a chronic shortage of financing, whereas their investment needs (i.e., in aircraft, maintenance, etc.) are enormous and prevent them from acceding to transport modules that are adapted to their market; From Table 3, 37% of the airlines are defunct, suspended or have ceased operations and 35% of the airlines are wholly owned by government. While 22% of the airlines have already sought privatisation options in order to remain operational. Interestingly 20% of the airlines are co-owned by foreign investors, with Air France having a stake in 7 of the 10 airlines.

II. Furthermore, the load factor, which is the ratio of the revenue passenger kilometres (RPK) to the available seat kilometres (ASK), is one of the critical determinants of profitability in relation to the break even load factor. Figure 2 shows that the African region has the lowest load factor at 62.56%, compared with other regions of the world. The Far East and Pacific regions have relatively high load factors, averaging 76.32%. The low load factors are a reflection of the scanty routes in the African region. The routes are scanty because of the much higher air fares compared with those in other regions of the world and because of a relatively poor population, hence the sparse travel demand on the continent.

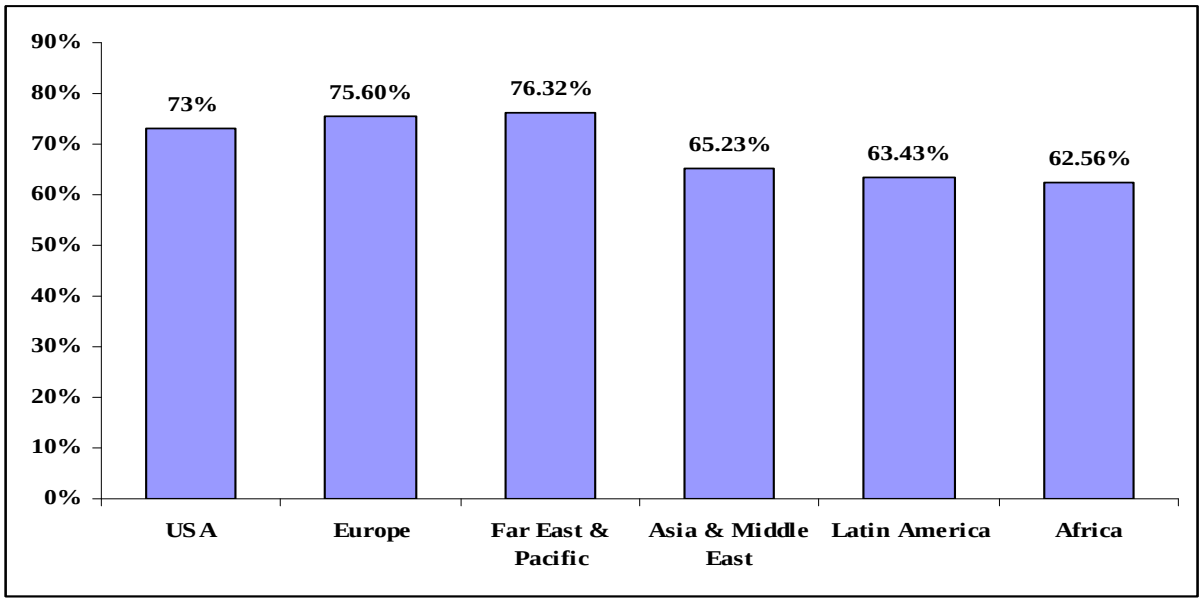

Figure 2: Load factors for world regions (Source: Chingosho, 2005)

III. The elasticity of demand, with respect to fare, for all travellers is lowest in Africa and highest in the USA, as shown in Figure 3. This is a reflection of the limited options available to travellers within Africa (Chingosho, 2005). Low income levels affect the majority of the population groups for all African countries. This results in low levels of disposable incomes and very small markets (i.e., business or leisure) which in turn makes it is difficult for airlines in these countries to generate sufficient returns on aircraft investment

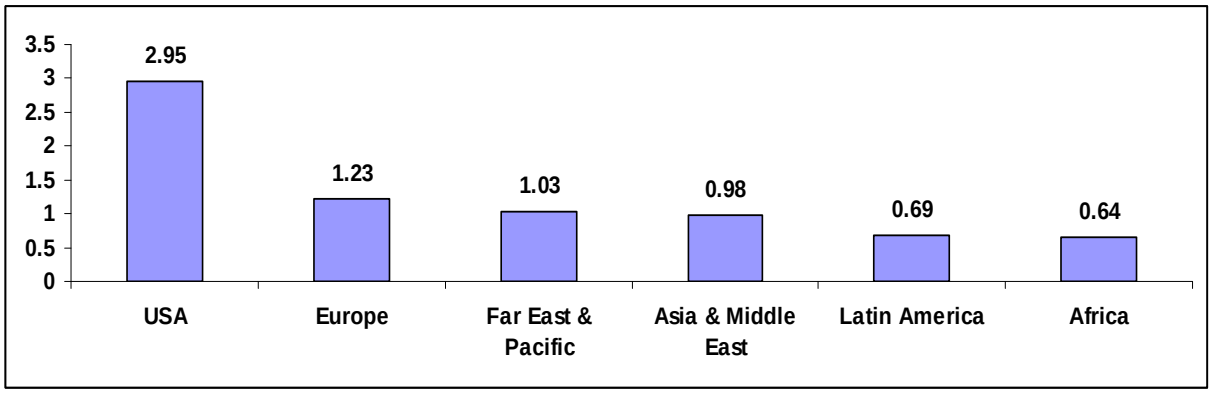

Figure 3: Elasticity of demand for all travellers (Source: Chingosho, 2005)

IV. Minimal use is made of modern technology within the continent, (e.g., management and decision information systems, online reservations, e-ticketing etc.). This use of modern technology poses a challenge because it can be costly but crucial to the sound management of airlines. Low cost carriers rely on direct sales techniques through the Internet, thus eliminating the need for expensive commissions to travel agents, and expensive call centers. Ticket distribution now makes up 3% of costs at Ryanair versus 10% at larger carriers.

V. Very few airlines operating within Africa has membership of world airline alliances. This has become one of the conditions for the FSNC survival and the minimal involvement of African airlines in world airline alliances has resulted in a marginalization of African carriers from world markets as alliances build networks though connections on various continents and attract and retain passengers though loyalty schemes. The majority of African airlines have been denied any form of alliance membership due to their non-compliance with international norms and standards or their inability to attract high passenger volumes. Furthermore, membership into these alliances is quite expensive for a continent where 8% of the state-owned airlines are going through financial problems and are currently considering privatisation. Currently, only three airlines, Egypt Air (joined Star Alliance as full member in 2008), Kenya Airways (joined SkyTeam alliance as associate member in 2007) and South African Airways (joined Star Alliance as full member in 2006) are members of world airline alliances.

VI. In 2003, Africa had a fleet of 1,165 aircrafts, comprising 605 jets and 400 turboprop airplanes, their average age was 20 years, compared to 12 years in North America, 9 years in Europe and 7 years in South-East Asia. (Chingosho, 2005)African carriers often use old generation fleets some of which do not comply with international standards, making them primary targets for blacklisting in certain regions of the world. Of the operational state-owned airlines in table 3, 4% have been blacklisted by the European Union. Table 1 affirms that Africa has the largest number of old aircraft and the smallest number of new and average aircraft operating in the world.

Table 3: Percentage of aircraft age operated in world regions

REGION	NEW	AVERAGE	OLD
Africa	28%	19%	54%
America	30%	47%	24%
Europe	52%	40%	7%
Asia	48%	40%	12%
Middle East	45%	27%	29%
Pacific	57%	38%	6%

Source: Airbus 2006, Airclaims

VII. Direct operation and service costs in Africa are higher than in other parts of the world: cost of fuel, ground handling, and financial expenses (i.e., cost of capital); staff training; maintenance of aircrafts, computer equipment and telecommunications; etc.) . The highest component that increases the cost of fuel into the continent is the transport cost because most of the countries are landlocked.

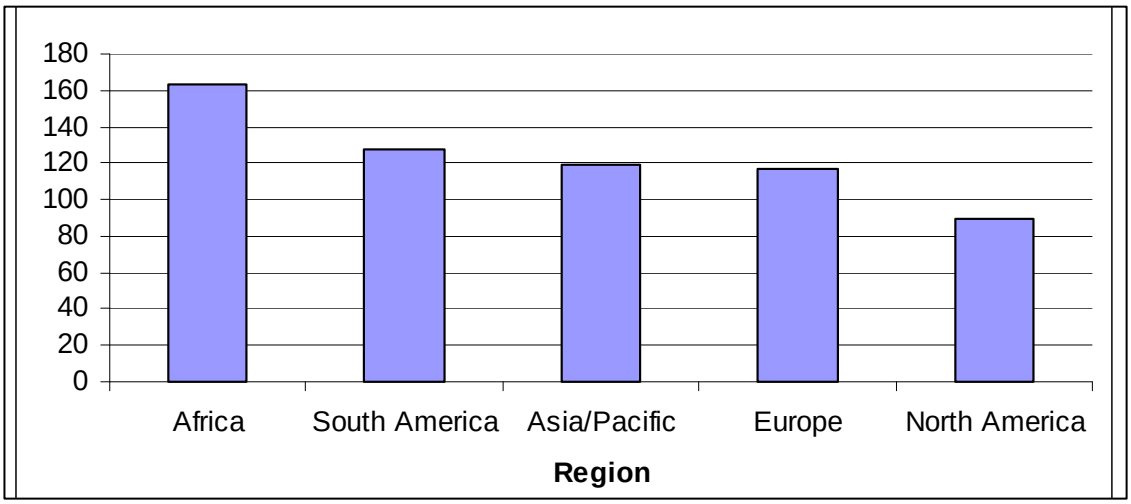

Figure 3: Average Fuel/oil Price paid(US Cents per gallon) (Source: IATA, 2006)

3. REFORMING AFRICA'S AIRLINE BUSINESS MODELS

The inherent flaws that have emerged in the business models that have been pursued by the major network airlines are assessed to show specific ways in which major airlines can adopt and survive.

3.1. Aircraft ownership, Acquisition and Maintenance Models

The recent ratification of the Aircraft Protocol at the Cape Town Convention (or formally the Convention on International Interests in Mobile Equipment 2001 (CIIME), an international internet-based registry has been established for the filing of interests in aircraft and aircraft engines by the International Civil Aviation Organisation (ICAO). This registry would also pave the way for African states and investors to acquire much needed financing for aircraft and associated equipment, as all information pertaining to the transactions, credit ratings and practical experiences would be fast tracked due the due diligence process for all parties involved. In general, the growing availability of an array of financing instruments, e.g., wet, damp and dry leases, operating leases, derivatives, cross-equity swaps, debt for equity swaps, foreign currency denominated bonds, currency hedging, forward-fuel contracts and venture capital, would enable airlines to take strategic equity interests in other i.e., competing airlines. In other cases, private entrepreneurs and closely held conglomerates have acquired incumbent and financed start-up airlines. In

addition to equity financing, there has been a growth in new forms of secured credit or debt financing. The main instruments are various forms of credit secured on specific assets and aircraft-specific leases, as governed by the CIIME and the relevant ICAO annexures.

3.2. Reforming/Changing the Ownership Stakes for state-owned Airlines

As airlines survive the current global crises, change in the corporate/state ownership of airlines has become crucial for state-owned airlines as never before. Alliance Air, Air Tanzania and SAA can be used as case studies that illustrate the change in ownership of state-owned airline that precipiated the demise of already struggling airlines. Some ownership initiatives that have been successful have been seen with Libyan Arab Airlines and Afriqiyah airlines (Libya) being held by a holding company. The Libyan Arab Airlines Holding company (LAAHC) is owned by four government entities: the Libyan National Social Fund (30%), Libyan National Investment Company (30%), Libya-Africa Investment Fund (25%) previously the owner of Afriqiyah Airways and the Libyan Foreign Investment Company (15%). The handling, maintenance and catering organisations that had previously been separated from with the flying activities of Libyan Arab Airlines refocused under the name of “Libyan Airlines.” LAAHC has been created in a bid to privatise much of the airline's operations and further strengthen the probability of a merger between Libya’s two state airlines. A code-share arrangement was set to be implemented on all flights of the two airlines from June 2008 as the first step towards a merger. (Endres, 2008) One of the key areas that create friction when changing ownership stakes of state owned airlines is the potential imbalance between the strategic direction of the airline and the national priorities, e.g., at the new owners will want to run a profitable and efficient organisation and that may involve rationalisation of jobs and/or equipment.

3.3. Adopting relevant corporate governance structures

According to Carney (2006) there are a variety of governance structures that have been applied to airline operations. Governance becomes a key issue when operating state-owned enterprises, so as to impose a fiduciary duty to ensure that the company is operated efficiently, to the benefit of the tax payer. Details of some of the effective governance structures are presented this section.

3.3.1 Managerial Governance

In this type of governance model ownership rights are mediated by institutional investors but day-to-day management is vested in the hands of professional executives. For example Ghana International Airlines established in 2004 as a partnership between the Government of Ghana and a group of private international investors, replaced the defunct Ghana Airways (that had ceased operations in 2004). An experienced team led by Ralph Atkin, founder of SkyWest Airlines in the United States was also installed. The management team included the former Chief Executive Officer (CEO) of Kenya Airways – Brian Presbury, as well as Albert Vitale, Sean Mendis and other experienced airline professionals. Ghana International Airlines was designated as the national airline in 2005.

3.3.2 Entrepreneurial Governance

In this type of governance model ownership and control are closely held in the hands of an individual entrepreneur. Such entrepreneurs do not need to rationalise their decisions to internal committees or equity markets and enjoy greater freedom to innovate. Entrepreneurs such as Fred Smith at Federal Express and Richard Branson at Virgin

Atlantic Airways have been able to develop innovative business models because they were not constrained by the conventional wisdom and traditional airline business models.

3.3.3Stakeholder Governance

This type of governance model is characterised by ownership that is shared by various "insider" stakeholders such as employees or banks. For example, at Korea's Asiana Airlines, the principal shareholders are a business group and two state-owned banks and partner airlines. However, the day-to-day management is vested in the hands of professional executives. Another example was seen in Swissair which acquired equity stakes in numerous airlines to secure contracts for its information technology, consulting, logistics, engineering, and catering businesses, which it anticipated would grow into successful stand alone business units.

3.4. Restricting Foreign Ownership in State Owned Airlines

Recent research suggests that many states retain foreign ownership restrictions on their airlines because officials believe that domestic ownership promotes economic development, job preservation, trade and tourism, and capital retention (Chang et al., 2004). In other cases, national security is cited as the main reason for ownership restrictions (Warden, 2003). Former U.S. Labor Secretary, Robert Reich (1991) suggests that the implicit assumption behind foreign ownership restrictions is the questionable belief that local owners are more likely, than foreign owners, to consider the national interest or serve local Stakeholder interests. The one element that remains critical in this form of governance model is that government involvement should be reduced where it lowers the efficiency of the organisation. Indeed, this is why for most state owned airlines, the shareholder interests are looked after at a strategic level, even when foreign ownership is permitted.

3.5. Resurrecting Defunct Airlines through Mergers and Validating Carriers

Consolidation of network carriers will inevitably involve either consolidation across national frontiers (mergers between airlines in different countries) or complex business arrangements between groupings of carriers of different countries to achieve as many of the efficiencies that outright mergers would have enabled. According to Tretheway (2004) Nations would be well served by eliminating foreign ownership restrictions of air carriers and allowing cross border airline mergers and finding other means of achieving nationalistic goals for air transport. Another element of importance is that most of the defunct African airlines have route rights, and unutilised slots and frequencies that with the right operating leases, can be resurrected, as long as the risks associated with the mergers are minimised. For example the Sierra National Airlines (Sierra Leone) deal which fell through because the South African aviation company which had proposed to take over the operations uncovered existing debts which included landing fees, passenger handling fees, rental fees, etc.

3.6. Recapitalising Airlines through Alliances and Mergers

Through technological cooperation and the tool-sharing that it implies (i.e., code sharing, interlining, etc.,) the purpose of alliances enables potential customers to be offered a network that covers the greatest possible number of major destinations which enhancing the profitability potential. Each company operating in the air transport business may be committed to different types of operational agreement with different players. For example, Air France has effectively merged/acquired Dutch airline KLM while at the same time entering into code-share agreements with numerous other carriers including Kenya Airways (which was recapitalised though its merger with KLM). The network connectivity, recapitalisation and passenger demand numbers all improved its position and Kenya

airways now finds itself as part of the Sky Team because of this alliance. (Meersman et al, 2008)

Additional benefits of mergers/acquisitions can result in lower ticket prices. Kim and Singal (1993) examined the impact of the fourteen U.S. airline mergers (national and/or regional carriers) that took place over the 1985-88 period, comparing routes affected by mergers with a control group of unaffected routes. They found that over the period from the initiation of merger talks through merger completion, the merging firms increased fares on average by 9.44% relative to unaffected routes, and any competitors on the affected routes raised their prices by even more 12%-17%, on average.

3.7. Adopting Low Cost and Risky Aircraft Ownership Structures

The aviation industry is one of the most capital intensive industries, with the largest fixed cost item being the aircraft. The various low cost and low risk aircraft ownership structures that have recently developed along with their associated funding structures include the leasing options that are flexible enough to warrant newer aircraft, whose ownership, maintenance and insurance are all covered by the lease contracts. Some airlines use operating leases, whereby the aircraft is owned, maintained and operated by a code-sharing or alliance partner for specific routes. These structures have lowered the capital cost of the business model, such that acquiring of aircraft is not mandatory for operations but is necessary to improve debt-equity ratios and provide healthier balance sheets for airlines.

3.8. Expanding Networks through Code Sharing with Smaller Carriers

When the size of the internal markets is large, asymmetric configurations, where one carrier chooses a Hub-and-Spoke strategy and the other chooses a Point-to-Point strategy are the only stable equilibria.(Marco A, et al , 2006) The point-to-point system in a large network the size of Africa can be either smaller carriers offering connections like South African Express (SAX) does for SAA or for smaller carriers to expand their networks by using code-share agreements like Rwandair Express which is currently in code sharing agreements with SAA on the Kigali (Rwanda) – Entebbe (Uganda) route and with Kenya Airways on the Kigali – Nairobi (Kenya) route. LCC remain competitive on the high density point-to-point routes that offer economies of scale at high frequencies.

3.9. Creation of Spin-off Airlines

The creation of spin-off airlines can work for some network carriers. This strategy is a way in which to tap into the ever changing business models in a sparse markets especially when they have the potential to create spin-off niche carriers such as regional carriers, LCC or charter aircraft. An example, Moçambique Expresso is an airline based in Maputo, Mozambique. It operates domestic and regional scheduled and charter services. Its main base is Maputo International Airport. The airline was established in September 1995 as Special Operations Department of Linhas Aéreas de Moçambique (LAM). It started operations and soon became Moçambique Expresso in 1995 as an independent airline. Mango Airlines is a LCC that is wholly owned by SAA and started operations in 2007. It competes within the same domestic market, operating former SAA aircraft. Air Canada has transferred a number of its aircraft to its Zip subsidiary that by the end of 2003 Zip consisted of roughly 20 aircraft which formerly had been part of the Full service national carrier(FSNC) fleet. This represents roughly 16% of Air Canada's jet fleet capacity. CEO Robert Milton has indicated that he intends to have roughly 40% of Air Canada' capacity deployed in what Air Canada considers to be an LCC model.

3.10. Adopt Low Cost Carrier Operating model

Kalappa (2006) summaries the low cost carrier (LCC) business model as follows; it offers just one passenger class (economy), often with higher density seating. In some instances, seat configuration by LCCs creates up to 15 percent more seats when compared to similar aircraft of established legacy carriers.

LCCs typically utilise a standardised fleet to reduce maintenance, operational and training costs. In addition, they use high volume, point-to-point routes, often from less crowded secondary airports, thus avoiding inconvenient and expensive operations of primary airports. They also save on expenses by returning flight crews to their home base at the end of daily operations. This strategy negates the need for hotel rooms, servicing and transport at airport away from home base.
The two key strategic goals of LCCs can be described as 1) filling aircraft to ensure that profit margins are maintained; and 2) turning around aircraft in the shortest possible time. The business model adopted by LCCs is arguably more robust and has gradually undermined the ability of the FSNCs to practice price discrimination in order to recover their full costs. Nevertheless, FSNCs still have a future but they will take a smaller market share. (Tretheway, 2004)The LCC business model is based on strict adherence to a number of principles, namely, short-haul, point-to-point, dense routes, maximisation of flying hours, use of secondary airports, high frequency of service, no delays, quick turn-around time. It strove to combine low costs, low fares and high demand and capacity utilisation (Meersman et al., 2008). Some of the advantages that could be realized through the adoption of this operating model by African airlines include;

3.11. Outsourcing Aviation Service Models

Outsourcing call-centers and closing ticketing offices in city centres, where real estate costs are higher. The Internet has revolutionized sales distribution channels, and the airline industry is no exception. Low cost carriers rely on direct sales techniques through the Internet, thus eliminating the need for expensive commissions to travel agents, and expensive call centers. Ticket distribution now makes up 3% of costs at Ryanair versus 10% at larger carriers. In addition, the legacy carriers have copied the aggressive marketing techniques employed by the LCCs offering discounts when purchasing tickets online which has enabled them to capture a growing percentage of the business traveller market

3.12. Growing the Non-aeronautical Business Revenue

The e-commerce industry has grown exponentially in recent years and it has created sources of revenue that LCC aggressively utilise. For example Ryanair generated more than half of its operational revenue (earnings before interest and tax) through activities that had little or nothing to do with flying. Typical examples of such diversification activities are car rentals and hotel room reservations for which LCC's can earn commission through advertisement and offering flight package deals through internet websites.

4. CONCLUSIONS

The main aim of this paper is to review the state of current state-owned airlines in Africa, highlight some of their inherent weaknesses and identify elements within their operational models that can improve their sustainability.

Data pertaining to state-owned airlines in Africa was assessed , highlighting some of their inherent weaknesses and identifying elements within their operational models that can improve their sustainability. The elements that were recommended within the airline business models are those that have been adopted by airline industries worldwide, in the environment.

Key issues pertaining to Africa's specific conditions like the funding structures for; acquiring, leasing and maintaining newer aircraft were highlighted. Within the operating environment, efficient methods of running the airline from reducing delays, quick turn-around times, and growing non-aeronautical revenue were highlighted.

For state-owned airlines, the more prudent decision as to whether to retain or reduce government control through privatisation while ensuring strict corporate governance principles. The growth of air route networks, markets and capital or equity through alliances and mergers with foreign entities is the only direction that the currently profitable state-owned airlines worldwide have adopted and survived.

The survival, growth and sustainability of African airlines within today's aviation market lies in their ability to operate cost effectively and prudently to adopt low risk capital and operational business models. Furthermore, the flexibility of the African airline to adapt to the various business structures and successfully operate in the varying and extreme market conditions within Africa will determine their levels of sustainability and future profitability.

.

References

Alderighia M., Centob A., Nijkampc P., Rietveld p., 2005, Network competition—the coexistence of hub-and-spoke and point-to-point systems, Journal of Air Transport mManagement 11, pp.328-324

Bieger T., Doring T., Laesser C., (2002) Transformation of business models in the airline industry-impact on tourism, Air Transport and Tourism Research outputs, University of St Gallen. http://www.cfac.unisg.ch/org/idt/cfac.nsf/338a93192a5036c7c12568ff0040fed0/62E28899991BA039C125703F0032A6FA/$FILE/Transformation+of+business+models+in+the+airline+industry+-+impact+on+tourism.pdf

Carney M., Dostaler I., (2006), Airline ownership and control: A corporate governance perspective, Journal of Air Transport Management, Vol. 12, pp. 63-75.

Chang, Y.-C., Williams, G., Hsu, C.-J., (2004), The evolution of airline ownership and control provisions. Journal of Air Transport Management, 10, pp.1161–172

Chingosho E. (2005), African Airlines in the Era of Liberalization; Surviving the Competitive Jungle, E-Book, ISBN 9966-05-011-

Doganis, R. (2001) The Airline Business in the 21st Century. Routledge, London

ECA (United Nations Economic Commission for Africa) 2006, Strategies for Airline transport Industry in Africa: Working paper, High level meeting of African airline companies.

Endres G., Libya to restructure air transport sector, Flight Global Magazine, May 2008, http://www.flightglobal.com/articles/2008/05/20/223823/libya-to-restructure-air-transport-sector.html, accessed January 2009.

Hansson T., Ringbeck J., Franke M., (2003), Flight for survival: A new business model for the airline industry, Strategy and business, 2003, issue 31, pp .78-85.

Kalappa V., 2006, The evolution of LCCs; A case study, presented at the Air Transport research Society, Nagoya, Japan.

Kim, E., and V. Singal (1993) 'Mergers and Market Power: Evidence from the Airline Industry', *American Economic Review*, 83, pp.549–569.

Meersman H., Voorde van de E., Vaneislander T., 2008, The air transport sector alter 2010: A modified Market and Ownership Structure, EJTIR, 8, no. 2, pp71-90.

Reich, R., 1991. The Work of Nations, Vantage, New York

Tretheway M W., (2004), Distortions of airline revenues: why the network airline business model is broken, Journal of air Transport management, Vol. 10, pp 3-14.