THE COMPONENTS OF AIRLINE BUSINESS STRATEGY AND THEIR IMPACT ON REVENUES

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ABSTRACT

This study hypothesizes that, as a result of government's bilateral agreements and regulations that limit the impact of globalization, a set of components which constitutes the airlines' business strategies have a direct affect on airlines' revenues. The hypothesis is tested on a sample of 15 US airlines, which substantiates that three out of four suggested components have a positive significant influence on the airlines' revenues. *Markets* - confirms that international flights help to increase the airline revenue; *Product* - with a significant positive impact on revenue when the airline offers low cost flights; and *Operation* - flights from hubs where found to have a significant negative affect on airlines' income while point-to-point flights, characterized by low cost airlines, are more advantageous. The fourth component, *Generic Competitive Advantage,* was found to be a choice component; namely, an airline may succeed by being either a cost leader or a differentiator in the markets and products it is serving.

Key words: Airlines strategy, business strategy components, revenues

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1. INTRODUCTION

Air transportation is characterized by network attributes, high fixed costs, highly unstable demand, need for great expertise and emphasis on safety. Airline revenues are: a) seasonal (more persons take vacations in the summer); b) cyclical – affected by the rate of growth of GDP and by political events; c) volatile - influenced strongly and immediately by exogenous events, e.g. recessions, wars, or terrorist attacks. When demand slackens, the industry must limit capacity. Yet its structure encourages over-capacity. Several characteristics of the airline industry are decisive to any attempt to deal with the components of airlines' strategy.

First, airlines offer a standard service, common to all suppliers; thus, it is hard to identify or build customer loyalty. Second, the industry is mature and requires very large turnover and therefore a mass market to be profitable. Therefore, it is a perfect candidate for consolidation to a global oligopoly structure with a few global operators, a number of regional carriers, and low-cost carriers on high-density lines. A global carrier would enjoy significant economies of density and of network and spread risks across world markets, However, arcane webs of international agreements by governments around the world, led by the United States, prevents the airline industry from consolidating and restructuring like other mature industries. Instead, despite much rhetoric of free trade, air transportation was the one sector unanimously agreed to be excluded from the Uruguay Round agenda. Inward FDI in airlines have been constrained by ownership requirements in bilateral Air Service Agreements (ASAs) that thwarted mergers and acquisitions across state lines. No one government is willing to allow unfettered international air operations, free from national (or Federal) controls. IATA called in 2003 for changes in what it termed “the three pillars of stagnation”: the bilateral system, national ownership rules and the attitude of competition authorities. Yet all carriers remain subject to highly restrictive controls on cross-border competition, financing or investment. These carriers cannot create the globally owned network they want, or to acquire foreign airlines. Governments are remarkably consistent in defending and supporting their nation’s “loss leaders,” often enduring tremendous financial burdens (Thomas 2011). Since cross-border mergers and acquisitions were not possible, airlines have turned instead to various forms of alliances and code-sharing agreements.

Third, air travel demand has shown a steady, long-term growth but with a high degree of volatility as regards both profit and demand. Thus, the operating revenues of all US airlines in 2010 (USD $130,503M), was almost equal to that of 2000 (USD $130,248M), but with a peak of USD $186,087M in 2008 and a low of USD $107,124M in 2002 (RITA, 2011). This

volatility is a direct result of the nature of the demand for passenger air travel, which is a derived need for business trips, vacations or visiting relatives; of course, airline business also includes mail and freight transportation – that are affected by the business cycle. We posit that each airline orchestrates a strategy designed to match the supply of air services with the hard-to-predict demand, taking into account regulatory and other environmental restrictions. Airlines enabled globalisation and more openness of international trade. They themselves, however, are subject to a regime that prevents the creation of global airlines. This regime also reduced the likelihood of inward FDI of airlines. The international regime distorts competition, allowing weak carriers to linger and airports – to compete on an arcane network. However, as long as the regulatory framework- and specifically the nationality clause - will not change, airline strategies will be based on that political reality.

In this paper, we identify the components of business strategy specifically relevant for airlines within the present restricting regulatory environment, and investigate the impact of these components on airline revenues. We will start with a literature review that assesses the contributions made so far by studies on the subject of airline strategy as well as the special characteristics of the airline industry. This will help us choose the components of airlines' business strategy for testing their impact on airlines' revenues. The hypothesis will be tested empirically on a sample of 15 US airlines. A discussion of the results will follow by conclusions, limitations and suggestions for future research.

2. LITERATURE REVIEW

One of the most important factors affecting the markets of the airline industry is globalization, which is restricted by the regime under which they operate. This political regime prevents the airline industry from consolidating globally and restructuring (Aharoni, 2003). Indeed, airlines are globalizers but cannot globalize – at least not by acquiring foreign airlines (Aharoni, 2002). As pointed out by Oum, Yu, and Zhang, 2001:

> "*Domestic deregulation and liberalization have been progressing at an uneven pace across countries, and liberalization of the international markets has yet to overcome numerous obstacles. Air carriers, on the other hand, need to build up an extensive global network to realize economies of scope and density and to meet consumer demands."* (Oum, Yu, and Zhang, 2001)

Clearly, airlines cannot create a global network. The alternative chosen was agreements on code sharing (e.g. Ramon-Rodriguez, Moreno-Izquierdo and Perles-Ribes, 2011). To be sure, the environment in which airlines operate has changed within the United States and the European Union, while the impact of globalization was restricted. The U.S. deregulated air freight (1977) and passengers' flights (1978) so that some flag carriers were privatized. Since 1988, the EU adopted several measures designed to extend to the aviation sector both the freedom to provide services and the Community competition rules. Pricing was freed from the regulation of ASAs between countries and full cabotage (the right to pick up traffic in a destination country and fly it to another destination in that country) was allowed throughout the EU among member-states since 1997. The reform creates one European Common Aviation Area (ECAA) of 15 states but only in respect to intra-ECAA service. It transformed intra-Community air service from international to domestic but did not change the rules outside EU nor did it allow access to non- Community airlines (Council regulation 2407/92).

Airline deregulation in the US and in the European Union has enabled the emergence of low-cost airlines. This new competitive environment has stimulated researchers to re-analyze the airline industry and suggest strategies for handling the competition between either full service legacy airlines opposite low-cost airlines or vies versa (Cobb, 2005; Forgas et al. 2010; Jarach, Zerbin and Miniero, 2009; Morrell, 2005; O'Connell and Williams, 2005).

Graf (2005) tested the feasibility of having a low-cost operation side by side with a full service operation, and found it to be incompatible. A detailed analysis of the failure of Delta-Light, a subsidiary of Delta Airlines, to compete with Southwest Airlines reached the conclusion that side by side low-cost and full service is not feasible because of the large gap in culture needed for those two type of services (Porter, 1996). Other studies reached similar results regarding the feasibility of the idea of an airline within an airline (Morrell, 2005). In a recent article, Lin (2012) finds that hub carriers may have excessive incentive to adopt an "Airlines-within-Airline" strategy from a welfare viewpoint, especially, when low-cost rivals exist. Some airlines like Qantas found the solution in a two-airline strategy, using two brand names, the full service Qantas and the low-fare Jetstar.

A comprehensive analysis of competition between network carriers and low-cost carriers, with concluding remarks on the outcome of this battle is presented by O'Connell (2004). His survey reveals that there are differences between passengers travelling on a low-cost carrier

and those travelling on a full-service airline. His conclusions support the study undertaken by Proussaloglou and Koppleman (1995) on the demand for air carrier services that found implicit tradeoffs between the cost and service attributes of each fare class, the schedule delay corresponding to each flight, and the patterns of frequent-flyer membership.

The way some airlines circumvented the regulatory restrictions on globalization was by joining an alliance or building code-sharing agreements (e.g. Ramon-Rodriguez, Moreno-Izquierdo and Perles-Ribes, 2011). Several additional studies (Albers, Heuermann and Koch, 2010; Evans, 2001; Franke, 2004; Graf, 2005; Ringbeck, Starr and Manning, 2010; Vaara, Kleymann and Seristö, 2004) examine the advantages and disadvantages of joining an alliance or having a code-sharing agreement (see also Aharoni, 2002 and 2003). None of these published researches deal specifically with the general concept of airline comprehensive strategy or of strategy components.

As to airline strategy in general we found the first reference in an article entitled "Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy", written by Levine (1987). However his classification of strategy refers to functional strategies rather then the comprehensive business strategy.

The next explicit reference to airline strategy was made by Sorenson (1990). His research focused only on generic competitive advantage and suggested three possible advantages for airlines; namely, cost leadership, area monopoly and service differentiation. Other possible components of strategy were ignored. In 2003, Hätty and Hollmeier suggested flexibilization (flexible stabilization), as a strategy to manage the cyclical nature of the airline industry.

Kemp and Dwyer (2003) refer to the components of airlines' mission statements suggested by Pearce and David (1987); unlike Pearce and David, whose research was based on a sample out of Fortune 500 and thus on a variety of industries, Kemp and Dwyer related solely to airlines. They analyzed the types and number of components they found for each of the 50 airlines in their sample, but did not examine the impact of any of these components on airlines' revenues. Since the publication of Pearce and David's 1987 article, the subject of strategic management has developed significantly. Most of the mission statement components they mentioned are now considered to be the building blocks of business strategy (Abell, 2006; Collis and Rukstad, 2008; Hambric and Fredrickson, 2001).

Another way of looking at airline strategy is via key success factors, airline cost structure and revenues of the industry. The most elaborate study on this subject is that of Seristö and Vepsuinen (1997). They conclude that fleet structure is one of the three key factors which affect indirect operating costs. The fleet structure has two facets: the strong affect of utilizing aircrafts from different manufacturers, which results in higher complexity of maintenance (procedures, spare parts and crew certifications) and operation (pilot training and certification), and a weaker affect of the variety of aircraft types from the same manufacturer.

The research studies summarized above analyze different aspects of airline strategies and globalization. None of them, however, examine the connection between the components of strategy and airlines' revenues. Our research aims to close this gap.

2. RESEARCH HYPOTHESIS

Based on the components of strategy suggested by previous research (Abell, 2006; Collis and Rukstad 2008; Hambric and Fredrickson, 2001), the findings of Kemp and Dwyer (2003) regarding the number of mission statements that include each component and the cost and revenues structure of airline operation (e.g. Seristö and Vepsuinen, 1997), we derived the following components of an airline business strategy:

- *Markets* - Serving only the national market or also the international market
- *Product* - Full service, low-cost, or regional
- *Generic competitive advantage* – Cost leader or differentiator
- *Quantitative Objectives* – The goals the strategy is designed to achieve.
- *Operation* - Hub and spoke system or Point-to-point flights

The rationale behind choosing these components is as follows:

- *Markets* - National only or international

An important component of airline's strategy is the scope of operations – specifically are operations restricted nationally or include global operations.

- *Product* - Full service, low-cost, or regional

As articulated by O'Connell and Williams (2005): "*Direct competition between full service airlines and no-frills carriers is intensifying across the world. U.S. and European full service*

airlines have lost a significant proportion of their passengers to low-cost carriers". Indeed a major strategic decision of airlines is which product they will provide.

- *Generic competitive advantage* – Cost leader or differentiator

The generic competitive advantage (GCA) is the cornerstone of any strategy (Porter, 1980). In general, airlines offer three separate products; namely, *low-cost*, *legacy full service*, and *regional*, this does not imply that low-cost is a "cost leader" and full service is a "differentiator". Any airline in each market/product may be successful either as cost leader or differentiator (Kling and Smith 1995). The strategic change of Aer Lingus is an example of this concept; they converted their strategy from a cost leader in the legacy airlines market to a differentiator in the low-cost market (Harrington, Lawton and Rajwani, 2005).

- *Quantitative Objectives*

This represents the aspiration of the firm for "survival and success", the importance of LRQG as a decisive part of the firm's business strategy is extensively elaborated in Aharoni and Noy (2009).

- *Operation* – Hub & Spoke or Point-to-point

Southwest Airlines was the first to look at airline operation "outside the box" of the conventional Hub & Spoke concept, which is considered more cost-efficient (Vasigh, Tacker and Fleming, 2008), and set up their operations offering point-to-point service. Over the years, point-to-point operations became a significant feature of low-cost airlines, while the legacy airlines kept their Hub & Spoke operations, and some of them adopted a dual-hub operational method. The adoption of a single hub, multi-hub or point-to-point operation has remained one of airlines' most important strategic decisions.

Having established the list of components, we test the influence of those components and the airline's revenue. The research hypothesis to be tested is that the components of an airline's business strategy have a direct affect on its revenues. We hypothesize that business strategy components have a direct affect on revenue. The one exception is *generic competitive advantage.* This component requires that a choice be made between two distinct alternatives - *cost leader* or *differentiator*. Either of these alternatives can cause low or high revenues: Each choice entails a designated variety of attributes with a fit among them. If the right fit is achieved, the airline would enjoy better revenues. If not - the revenues will accordingly be mediocre.

3. SAMPLE AND DATA CHARACTERISTICS

We tested our hypothesis using data from 15 U.S. airlines in the years 2005 to 2009, collected from 10-K annual reports submitted to the Security and Exchange Commission by the airlines, the annual Chairman's letter to the stockholders, and data published by the Research and Innovative Technology Administration (RITA, 2011) of the Bureau of Transportation Statistics. (Appendix A). The arguments for choosing this sample are as follows:

- U.S. airlines only: By using data on airlines from only one country, we eliminate the influence of different legal and regulatory environments on strategy, and ensure that all the airlines in the sample operate under the same legal and regulatory rules.
- Only 15 airlines: RITA statistics include the details needed for our research for only 15 airlines that have operating revenues of USD $20M or over. These 15 airlines account for 62.5% of all U.S. airline revenues in the years 2005 to 2009.

The chosen time period ranges from 2005 to 2009 - between 2001 and 2005, the U.S. experienced a period of turbulence, which made any analysis unreliable. Airlines lost USD $30 billion, and implemented wage cuts of over USD $15 billion. In addition, 100,000 employees were laid off because of the September 11, 2001 terrorist attack on air transport (Bamber et al. 2009). This event was followed by an unprecedented four-day shutdown of the airline system, and a prolonged period of low demand, due to economic recession, heightened security restrictions, the SARS (Severe Acute Respiratory Syndrome) outbreak in South China in 2002, concern over the invasions of Afghanistan and Iraq, and rising fuel costs. This "perfect storm" of events led to the additional loss of nearly $5 billion during 2001 to 2005 (US Air Transport Association 2006 in Goetz and Vowles, 2009). The upper limit of the chosen period – 2009 – is the year in which the last annual reports for all airlines were available.

To test our hypothesis, we carried out an OLS regression in which the natural logarithm of total revenues in the years 2005 to 2009 was the dependent variable. We chose revenues as the dependent variable and not profits for two reasons – first the typical US large corporation seeks to maximize its total revenue rather than its profits (Baumal, 1958; Amihud and Kamin, 1979). Second, revenues are straightforward, reliable data with a common base for all airlines and are not affected by differences in accounting concepts.

The explanatory strategy component variables are; *markets, products, technology, generic competitive advantage* and, *operation.* Unfortunately, none of the airlines in the sample published any *Quantitative Objectives*; hence, this explanatory variable was eliminated. To control for non-strategic attributes that might influence total airline revenues (Seristö and VepsUinen, 1997; Doganis, 2010), we recorded the following:

Technology: The choice of the variety of manufacturers and aircraft types operated by the airline.

Membership in an airline alliance and\or code-sharing agreement: The decision to join an alliance or code-sharing agreement, which is a way to globalize bypassing regulatory restrictions, may have an influence on the airline's revenue by widening the network of destinations offered to their passengers.

Hub dominance: An airline which is a major user of an airport may have an advantage, such as getting the best time slots for take-off and landing and, as such, may dominate the traffic from that airport. This corresponds to Sorenson's (1990) "area monopoly" competitive advantage.

Revenue structure: Airline revenue is generated, on one hand, by the carrying of passengers and, on the other hand, by the carrying of freight and mail. Trying to serve both markets has an affect on schedules, aircraft configuration, and airport choice. Furthermore, one airline may stress first class service, while another chooses to stress economy. Such a decision would affect the choice of routes as well as other operating variables.

Operating as a connecting regional carrier for major airlines: Some airlines choose to be regional carriers; this means most of their revenues are generated by receiving regional traffic from major airlines.

Operating provider: Some of the major full service airlines are willing to offer their passengers access to as many regional airports as possible, but do not provide this service themselves because of operational complexities. Thus, they enter into agreements with regional airlines to provide their passengers with this service.

4. RESULTS

To test our hypothesis and assess the relative impact of each of the suggested strategy components on airline revenue, we calculated the following three regressions. The first one uses only the following strategy components:

$$TR_j = a_1MLC_j + a_2MFS_j + a_3DR_j + a_4OPH_j + A_5GCAD_j \quad (1)$$

The second regression includes the strategy components as well as the control variables:

$$TR_j = a_1DR_j + a_2MLC_j + a_3MFS_j + a_4OPH_j + A_5GCAD_j + A_6AC_j + \\ + a_7A_j + a_8AP_j + a_9PR_j + a_{10}CC_j + a_{11}CP_j + \varepsilon_j \quad (2)$$

The third regression includes only the control variables

$$TR_j = A_1AC_j + a_2A_j + a_3AP_j + a_4PR_j + a_5CC_j + a_6CP_j + \varepsilon_j \quad (3)$$

Where:

Dependent variable

- TRj = the natural logarithm of the total operating revenues for the period from 2005 to 2009, j= 1 to 15 for the 15 airlines in the sample

Explanatory Variables

- DRj: % of revenues from domestic flights out of total revenues average for the period of 2005 to 2009;
- MLCj: a dummy variable equal to 1 when airline j competes in the low-cost market and 0 otherwise;
- MFSj: a dummy variable equal to 1 when airline j competes in the full service market and 0 otherwise;
- RGSj: a dummy variable equal to 1 when airline j is a regional service airline, and 0 otherwise; included in the regression constant;
- OPHj: % of the airline's flights from the 2 major hubs average for the period of 2005 to 2009;
- GCADj (generic competitive advantage): a dummy variable equal to 1 when airline j is a differentiator, otherwise (a cost leader) equals 0.

Control variables

- ACj (Aircraft index): (number of manufacturers)^2 + (Number of types of AC) averaged for the period of 2005 to 2009.
- Aj: a dummy variable equal to 1 when airline j is a member of an alliance or code-sharing agreement, and 0 otherwise.

- APj: % of airline j's flights from its major hubs out of total flights to the airport; average for the period of 2005 to 2009.
- PRj: % of airline j's revenues from passengers out of total revenues, average for the period of 2005 to 2009. Two airlines did not have this data.
- CCj: a dummy variable equal to 1 when airline j is a connecting carrier, and 0 other-wise.
- CPj: a dummy variable equal to 1 when airline j is a connecting provider, and 0 otherwise.
- ε_j: an error term satisfying the regression requirements.

The regression results are presented in Table 1

Table 1: Regression Coefficients of Strategy Component

Strategy component	Variable	Equation 1	Equation 2	Equation 3
Low-cost market	MLC	.696* (.273)	1.083 (.560)	
Full service market	MFS	.126 (.333)	#	
% Revenue from Domestic market	DR	-.077*** (.011)	-.097 (.038)	
% flights from hubs	OPH	-.052*** (.010)	-.054 (.023)	
Generic competitive Advantage	GCAD	.301 (.286)	.612 (.357)	
Aircraft index	AC		.090 (.079)	-.072 (.862)
Member of an Alliance	A		.932 (.728)	-.312 (.197)
Airport dominance	AP		.003 (.016)	.490** (.010)
% revenue from Passengers	PR		.015 (.044)	-.326 (.037)
Connecting carrier	CC		-.886 (1.020)	-.326 (1.033)
Connecting provider	CP		-.145 (.522)	.383 (.416)
	R_{adj}^2	.910	.896	.835
	ANOVA F	29.258***	11.306	14.926**

excluded from the regression

The dependent variable is the natural logarithm of the total operating revenue 2005 to 2009. All variables are defined following the regression equation above. Standard errors are in parenthesis. ***, **, * denote significance at 0.1%, 1% and 5%. Appendix B presents the Pearson correlation between all possible pairs of variables including the control variables. The results show that the correlation among any pair of the three variables found significant in the following regression analysis - namely, MLC (Low-cost market), DR (% of Revenues from domestic market) and OPH (% of flights from hubs) - is low and insignificant.

Variance Inflation Factor (VIF) tests for multicollinearity among the independent variables in Equations 1,2&3 for all regression variables was carried out. Following Neter et al. (1983), who suggest that a VIF level below 10 indicates the absence of multicollinearity problems, the results of these tests indicate no multicollinearity problem in the regression analysis, none of the independent variables has a VIF value exceeding 3.6. The White- consistent standard errors was calculated by an SPSS Generalized Linear models using the robust covariance matrix with maximum likelihood estimation. The omnibus test was significant (Likelihood-ratio chi-square (df=7)=36.68, $p<.01$), indicating that the model as a whole predicted natural log of revenue better than the intercept-only model. These results are consistent with similar results obtained from ordinary OLS regression.

5. DISCUSSION

The empirical results substantiate our hypothesis: three out of four suggested strategy components directly affected airline revenues. Flights abroad and reduced dependence on flights from hubs are very highly significant (0.1% or less), while being active in the low-cost market (vis-à-vis the full service market), are also significant (5% or less) in increasing the operating revenue of the airlines (with R_{adj}^2 of .910). As expected, the fourth component – *generic competitive advantage* - did not have any direct affect on revenues; each choice, cost leader or differentiator, entails a designated variety of attributes - if the right fit is achieved, the airline displays better revenues (Kling and Smith 1995).

The importance of flights abroad to airline revenues is clearly recognized by the legacy airlines (MFS), income of those airlines are significantly negatively correlated ($-.807^{**}$) to the percent of domestic flights (DR). We also find that the average percent of revenues from flights abroad for all US airlines, perhaps as a result of deregulation and liberalization of international flights, increased from 2005 to 2009 by 21.6% (from 12.5% to 15.2%). Full service airlines have a lower percentage of local flights (they are negatively correlated with percentage of local flights). Part of this finding might result from the transfer of a portion of their national regional flights to regional connecting providers (there is a significant positive correlation between full service airlines and connection providers). On the other hand, there is a significant positive correlation between the percent of domestic flights to membership in an alliance or code-sharing agreement, as U.S. airlines provide local flights for foreign airlines; however, this activity may not offset the influence of using regional connecting airlines. Another possible reason for this result is that US airlines having code-sharing

agreement are the largest airline in the sample, (except for Southwest Airlines, whose operating revenues is of the same magnitude, but is a low-cost carrier and has no international flights outside of the U.S.), and providing international flights offered them a venue from which they could grow and develop.

Some airlines still perceive their industry as a split between low-cost airlines, which essentially compete for cost advantages, and legacy carriers, competing on differentiation-based strategies. Other airlines perceive the industry as having two separate markets in which an airline may choose to be either a differentiator or cost leader. JetBlue for example, a low-cost airline, has adopted a differentiator strategy:

> "*JetBlue Airways exists to provide superior service in every aspect of our customer's air travel experience*" (http://www.jetblue.com/about/).

On the other hand, US Air, a full service airline chose to be a cost leader, as stated in their 10-K 2011 filing with the SEC:

> "*We have often elected to match discount or promotional fares initiated by other air carriers in certain markets in order to compete in those markets*".

Aer Lingus, as mentioned above, changed their strategy from that of cost leader in the full service market to differentiator in the low-cost market.

The result of our present research confirms the intuition that by choosing to operate in the low-cost market, the airline gets a significant positive impact on operating revenues, regardless of their Generic Competitive Advantage. As expected, the aircraft index is significantly negatively correlated to low-cost airlines, meaning that a low-cost airline uses less manufacturers/types of aircrafts.

Although the subject of alliances and code-sharing agreements which are substitute for direct globalization, has attracted the attention of academic research, this component, which was a control variable in the regression analysis (Equation 2 and 3), is not significant as regards its impact on airline revenues, as some of them had no agreements at all (e.g. AirTran, Southwest or Hawaiian), and others have regional connecting airlines (e.g. American, Continental, Delta, United) in addition to their alliance and code-sharing agreements.

The question of airline globalization, which is a decisive element in the future development of this industry, may be summed-up by the following quote:

> "*When it comes to globalization, the airline industry is wrapped in a paradox. For those who view the industry primarily from a passenger seat, the industry is one of the great drivers of globalization….. Yet, despite these truths, the industry itself remains remarkably local in its focus and approach—and has been so since its inception. Governments around the world, led by the United States, have been remarkably consistent in defending and supporting their nation's "loss leaders," often enduring tremendous financial burdens."* (Thomas, 2011).

6. CONCLUSION, LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

We argue that all four suggested components of airline strategy should be the construct of any airline strategy:

- *Markets* - Serving only the national market or also the international market.
- *Product* -Full service, low-cost, or regional
- *Operation* -Hub and Spoke system, or Point-to-point flights
- *Generic Competitive Advantage* – Cost leader or differentiator

The first three components were found to have a significant influence on the airlines' operating revenues. The last one, although – for reasons explained above –was not found to be significant, should also be included as part of any airline strategy. Generic Competitive Advantage is the cornerstone of any strategy (Porter, 1980) and is one of the optional strategy components. Again, an airline may succeed being either a cost leader or a differentiator.

The airline industry is facing diminishing profitability as stated in IATA press release (6.6.2011):

> *"The International Air Transport Association (IATA) further downgraded its 2011 airline industry profit forecast to $4 billion. This would be a 54% fall compared with the $8.6 billion profit forecast in March and a 78% drop compared with the $18 billion net profit (revised from $16 billion) recorded in 2010. On expected revenues of $598 billion, a $4 billion profit equates to a 0.7% margin"*;

Thus the future of the airline industry lies in lifting the present national restrictions on globalization and consolidation of the industry to a global oligopoly structure with a few global operators, a number of regional carriers, and low-cost carriers on high-density lines.

There are a number of limitations to our study, which might also provide direction for further research:

a) The research sample consists of U.S. airlines only, in order to eliminate the influence of different legal, regulatory and environmental issues, and the restrictions on global cross-ownership of airlines (Aharoni, 2003). This limitation suggests carrying out a more comprehensive study covering airlines from different countries.
b) The present study considered the airline industry as one market in which being a low-cost airline is an advantage. Further research should try to analyze the industry, distinguishing separately between the low-cost market and the full service market. The strategy components for these apparent two separate markets might be different.
c) Our research took into account the % income of passenger service out of the total income. Although fright revenue might have different strategy components while the optimum revenue and profit might come from the right mix of both services. This is one more suggestion for further research.
d) Another limitation of our research which might suggest further research might be that we did not make a distinction between passenger service classes – economy, business or first class. Some airlines like EOS, MaxJet, SilverJet or MGM Grand Air tried to operate as "business class only" airlines. They were grand experiments that just never took off. Two airlines - Singapore Airlines and British Airways operate some flights as "Business Class only". Other airlines like Lufthansa, KLM and Swiss -- contract with a company called PrivatAir to operate all-business-class service on several routes. BA owns OpenSkies doing the same. (Hobica 2011).

Beside the specific suggestions for further research, the dynamic global airline business is presenting a continuous stream of subjects for the academic and practitioners' research.

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Appendix A: Data Characteristics

Airline	Total Revenue M$	Markets[1]	% of Hub flights	Air Craft Index	Generic Comp. Advantage[2]	Alliance membership[3]	Hub Dominanace[4]	Revenue Structure[5]	Connecting[6] airline
AirTran Airways	10,546	1	16.5	3.0	2	2	17.2	96.1	2
Atlantic South West	6,178	1	44.2	12.5	2	2	28.0	98.9	1
Frontier Airline	5,910	1	49.8	4.0	1	2	16.0	86.5	3
JetBlue Airways	13,586	2	29.3	6.0	2	1	27.8	93.2	3
Southwest airline	47,904	2	11.6	4.0	1	2	73.8	93.7	3
Alaska Airlines	14,406	2	37.4	7.8	2	2	34.2	83.5	3
American airlines	109,577	2	33.6	14.9	1	1	54.7	79.3	2
Continental airlines	65,522	2	47.8	11.7	2	1	38.6	73.2	2
Delta Air Line	91,710	2	37.1	18.1	2	1	40.0	67.8	2
United Airlines	93,283	2	34.0	11.7	2	1	22.8	72.8	2
US Airways	47,845	3	21.0	18.0	1	1	26.3	65.6	2
Hawaiian	5,085	3	46.8	3.0	2	2	33.3	89.9	3
SkyWest	9,257	3	22.3	12.5	2	2	54.2	98.9	1
Comair	5,837	1	29.2	6.6	2	2	48.3	NA	1
American Eagle	9,792	1	34.6	19.1	2	1	29.4	NA	1

[1]Markets 1=LC 2=LFS 3=Regional, [2] Generic Competitive Advantage 1=Cost leader 2=Differentiator, [3]Member of an alliance and/or code share agreements 1=yes 2=no, [4]Hub dominance % of flights in the hub out of total flights, [5]Revenue structure % of revenue from passengers out of total revenue, NA=not available, [6] Connecting airline 1=connecting carrier 2=connecting provider 3=none

Appendix B: Pearson Correlations Matrix among Variables

		MLC	MFC	A	AC	GCAD	DR	CC	CP	PR	HUB	AIRPORT
MLC	Pearson Correlation	1	-.564*	.262	-.659**	-.318	.433	-.364	-.185	.459	-.105	-.092
	Sig. (2-tailed)		.029	.346	.008	.248	.107	.183	.510	.115	.709	.743
	N	15	15	15	15	15	15	15	15	13	15	15
MFS	Pearson Correlation	-.564*	1	-.464	.328	-.040	-.807**	-.564*	.600*	-.815**	.198	-.055
	Sig. (2-tailed)	.029		.081	.233	.887	.000	.029	.018	.001	.479	.845
	N	15	15	15	15	15	15	15	15	13	15	15
A	Pearson Correlation	.262	-.464	1	-.665**	.040	.706**	.262	-.600*	.755**	.063	.111
	Sig. (2-tailed)	.346	.081		.007	.887	.003	.346	.018	.003	.824	.694
	N	15	15	15	15	15	15	15	15	13	15	15
AC	Pearson Correlation	-.659**	.328	-.665**	1	.021	-.486	.289	.401	-.643*	-.151	.057
	Sig. (2-tailed)	.008	.233	.007		.940	.066	.296	.138	.018	.591	.840
	N	15	15	15	15	15	15	15	15	13	15	15
GCAD	Pearson Correlation	-.318	-.040	.040	.021	1	.165	.364	-.123	.194	.326	-.262
	Sig. (2-tailed)	.248	.887	.887	.940		.557	.183	.662	.526	.236	.346
	N	15	15	15	15	15	15	15	15	13	15	15
DR	Pearson Correlation	.433	-.807**	.706**	-.486	.165	1	.477	-.805**	.842**	-.185	-.008
	Sig. (2-tailed)	.107	.000	.003	.066	.557		.072	.000	.000	.509	.979
	N	15	15	15	15	15	15	15	15	13	15	15
CC	Pearson Correlation	-.364	-.564*	.262	.289	.364	.477	1	-.492	.539	-.118	.155
	Sig. (2-tailed)	.183	.029	.346	.296	.183	.072		.062	.057	.675	.582
	N	15	15	15	15	15	15	15	15	13	15	15
CP	Pearson Correlation	-.185	.600*	-.600*	.401	-.123	-.805**	-.492	1	-.716**	.083	-.148
	Sig. (2-tailed)	.510	.018	.018	.138	.662	.000	.062		.006	.769	.598
	N	15	15	15	15	15	15	15	15	13	15	15

PR	Pearson Correlation	.459	-.815**	.755**	-.643*	.194	.842**	.539	-.716**	1	-.035	.128
	Sig. (2-tailed)	.115	.001	.003	.018	.526	.000	.057	.006		.910	.678
	N	13	13	13	13	13	13	13	13	13	13	13
HUB	Pearson Correlation	-.105	.198	.063	-.151	.326	-.185	-.118	.083	-.035	1	-.625*
	Sig. (2-tailed)	.709	.479	.824	.591	.236	.509	.675	.769	.910		.013
	N	15	15	15	15	15	15	15	15	13	15	15
AIRPORT	Pearson Correlation	-.092	-.055	.111	.057	-.262	-.008	.155	-.148	.128	-.625*	1
	Sig. (2-tailed)	.743	.845	.694	.840	.346	.979	.582	.598	.678	.013	
	N	15	15	15	15	15	15	15	15	13	15	15

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).