
Economization Methods Used by Low-Cost Airlines – An Overview

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Dominik Punda¹, Małgorzata Jasiulewicz-Kaczmarek², Jacek Dziwulski³

Abstract:

Purpose: The crisis caused by the pandemic has forced airlines (both full-service carriers (FCC) and low cost carriers (LCC)) to review their business models and look for opportunities to make up for losses. The goal of this paper is to review the cost optimization methods used by LCC airlines and to identify the activities of LCC that were taken to reduce costs.

Design/Methodology/Approach: The analysis of the areas of economization of activities undertaken by the LCC carried out in the article is the result of a literature review of business models used by LCC carriers.

Findings: The conducted literature analysis allowed for the identification of seven main areas in which measures are taken to reduce the costs of the LCC line.

Practical Implications: Economization methods implemented by LCC lines at the strategic level reduce the carrier's costs and can be adapted to the market in which it operates.

Originality/Value: Although the business models used by LCC lines are not a new topic, the review of economization methods from a strategic perspective presented in the article has not been discussed in the literature.

Keywords: Low-cost airline, economization, operating costs, airline business model.

JEL codes: M10, M21.

Paper type: Research article.

¹Doctoral School, Kozminski University, Warszawa, Poland, dominik.punda@gmail.com;

²Faculty of Management Engineering, Poznan University of Technology, Poland, malgorzata.jasiulewicz-kaczmarek@put.poznan.pl;

³Department of Strategy and Business Planning, Faculty of Management, Lublin University of Technology, Lublin, Poland; j.dziwulski@pollub.pl;

1. Introduction

In the following paper, the method of economization is any action, both at the strategic and operational level of a given organization, the aim of which is to reduce operating costs, and thus to create a specific business model of a given line. It is strictly dependent on the place of operation (continent) and the specificity of the market in which a given entity operates (deregulation, international agreements, political factors). Most of LCC's economization methods were developed by the world's first low-cost airline, Southwest Airlines from the United States. Their implementation contributed to the financial success of this airline and was an inspiration to create new airlines with a similar profile and to introduce changes in the business models of existing airlines. The most famous are, among others: Sun Country Airlines, established in 1982, Spirit Airlines, established in 1992, Frontier Airlines, established in 1994, Allegiant Air, established in 1997, JetBlue, established in 1998. It is worth noting that the above-mentioned airlines are still operating in 2021. The effect of the rapid development of air carriers on the American market, through the use of economization methods applied by Southwest Airlines, was referred to as "The Southwest effect" as early as 1993 (Bennett and Craun, 1993).

According to Doganis (2006), the secret of LCCs' success is the focusing of services at secondary and regional airports due to the low operational cost structures, runway availability, not having deal with congestion, and rapid servicing, enplaning and deplaning operations.

The goal of this paper is to review the cost optimization methods used by LCC airlines and to identify the activities of LCC that were taken to reduce costs in the last two years. The crisis caused by the pandemic has forced airlines (both FCC and LCC) to review their business models and look for opportunities to make up for losses.

The article is composed of five sections. The second section presents the definitions of LCC. The next characterizes the business models used by the LCC and the general breakdown of the costs of the LCC airline. section four presents the main areas in which low-cost airlines have been optimizing costs in recent years and presents strategic methods of economization used by this type of companies. Section five concludes this paper and suggests further research

2. Definition and History of Low-Cost Airlines

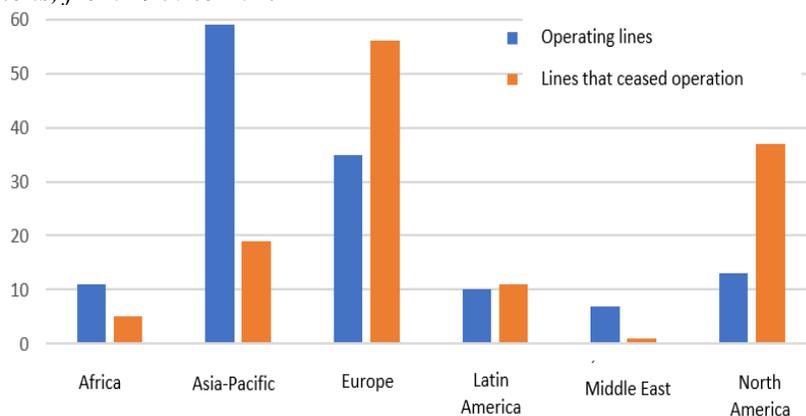
The most common definition of LCC is "an air carrier that has a relatively low-cost structure in comparison with other comparable carriers and offers low fares or rates" (ICAO, 2004). Another one is, "Although marginally different, most researchers define LCCs as carriers which, through a variety of operational processes, have achieved a cost advantage over full-service carriers (FSCs)"

(Schlumberger and Weisskopf, 2014). Loh, *et al.* (2020) defined LCCs as "airlines that are operated to minimize operating costs and without the conventional in-flight services and amenities (i.e. no-frills)".

The LCC model was developed in the U.S airline industry by Pacific Southwest Airlines (PSA) in 1970 and was implemented for the first time by the American domestic carrier Southwest Airlines, to offer lower airfares to the air travellers in 1971 (Diaconu and Popescu, 2011). Co-founder and CEO of Southwest Airlines were Herb Kelleher, who formulated his business plan as follows: "If you get passengers to their destinations when they want, on time, at the lowest fares possible and make sure they have a good time onboard, they will come back and fly your airlines again and again". Southwest is the airline that has opened a new era in transportation and managed to gain a different perspective on the sector (Yilmaz, 2017).

In other continents, low-cost airlines began to operate in the late 1990s (Forsyth, 2003). In the European market in the 90s of the twentieth century, some airlines adopted a business model based on the principles of Southwest Airlines, expanding them by adding new elements (Doganis, 2006). The LCC market is quite dynamic. Figure 1 shows a comparison of the number of low-cost lines which are in operation and which have ceased operations, taking into account the division into operational regions according to ICAO in 1980-2017 (LCC. ICAO list, 2021).

Figure 1. Number of low-cost lines which are in operation and which have ceased operations, from 1980 to 2017



Source: Own creation.

Low-cost carriers now operate globally, but LCCs operate differently in different regions. They are mainly focused on economic development, population structure, and other characteristics unique to each region (Zu *et al.*, 2020). In Europe, such a factor is, for example, the use of existing secondary airports (Barret, 2010).

3. Business Models Used by Low-Cost Airlines

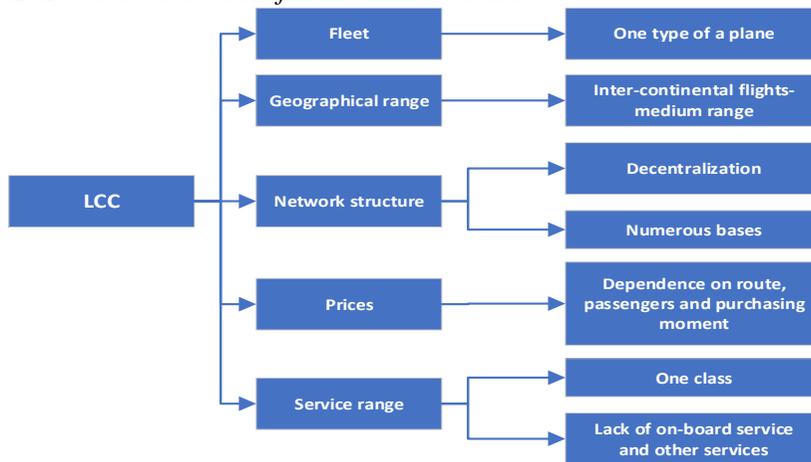
The term business model is widely used in academic and business literature. The analysis carried out by Zott, Amit, and Massa (2011) highlighted some common themes regarding business models as (1) a new unit of analysis, (2) a holistic perspective on how firms do business, (3) an emphasis on activities, and (4) an acknowledgment of the importance of value creation. According to Teece (2018), “a business model describes an architecture for how a firm creates and delivers value to customers and the mechanisms employed to capture a share of that value. It’s a matched set of elements encompassing the flows of costs, revenues, and profits”.

From the definitions of the business model concept, it can be said that airline business models demonstrate how airlines operate and create value for their stakeholders. The airline business model consists of four dimensions, the products and services provided while conducting activities in the organizational field, the relationships airlines establish with their customers, the infrastructure required for the products/services, and the revenue structure. Likewise, the airline business model can be defined as “the manner and logic of realizing the passenger, freight and cargo transportation activities” based on these business model definitions (Adiloğlu-Yalçınkaya and Besler, 2020). Airlines have a diversity of business models and do not act as a monolithic group. Each airline has a unique combination of business characteristics that helps to differentiate it from its competitors. However, airlines are not unique and share overlapping characteristics that allow us to classify them into larger groups, usually centered around the concepts of LCC and FSC.

The emerging forms of business models in the airline industry are presented in terms of how the carrier generates revenue, its product offering, value-added services, revenue sources, and target customers. According to Pereira and Caetano (2015), business models traditionally adopted by airlines are based on low-cost or full-service strategies being insufficient to answer the new market reality. LCC business models usually rely on single-class tickets, the use of secondary airports, the use of a single aircraft type, point-to-point transit, and, more generally, ‘no frills’, that is, no complimentary in-flight services are offered (e.g., Klophaus, Conrady, and Fichert, 2012). Klophaus, Conrady and Fichert (2012) computed a consolidated LCC index to categorize a ‘low-cost’ level to European low-cost airlines according to five main features of their business model, fleet homogeneity, secondary airports, pricing (i.e., one-way fares only and no more than one or two fares at any time), network (i.e., point-to-point service only and no code sharing), and additional services (e.g., no frequent flyer programs, single cabin class, and no free checked baggage). Low-Cost Carriers, by applying cost focus strategy and mixed strategy, try to keep costs under control and to minimize all cost items (Yilmaz, 2017). Although the business models of the individual airlines may vary, many common characteristics can generate an overall picture of what the low-cost business model is and what low-cost carriers represent (Figure 2). The low-cost

carrier business model has transformed the airlines market, making flying cheaper than driving, and opening significant new market opportunities (Fageda, Suau-Sanchez, and Mason, 2015).

Figure 2. The business model for low-cost carriers.



Source: Based on Schlumberger, and Weisskopf, 2014; Vidovic, et al. 2013.

Analysis of literature shows that, the difficulty for defining the low-cost airline business model is, in fact, a sign of the coexistence of several business models that are categorized under the “low-cost carrier”.

There is a classic competitive race between LCC carriers in a given region – based on the continental division. To be more competitive, these companies use new cost optimization methods derived from those adopted by Southwest Airlines. Reliable cost determination is extremely important for any organization. This also applies to airlines, in particular LCC, as their precise definition and monitoring are one of the main tools of this type of business strategy (Tsai and Kuo, 2004). When analyzing the models used by EasyJet, Ryanair, or Wizzair, it can be noticed that regardless of the carrier, the structure of the cost model is very similar (Figure 3).

Figure 3. General scheme of operational cost in an airline



Source: Own creation.

4. Economization of LCC Airlines Activities

The drive to increase efficiency is economization. It consists of choosing the most effective (best) among the possible actions due to the set goal and the conditions that limit this goal. The low-cost airline business model can take several forms and costs savings can be achieved from different sources (Daft and Albers, 2015).

When analyzing the literature on the activities undertaken by the LCC in the field of economization, seven areas can be distinguished, namely: (1) Crew planning; (2) Aircraft fleet management; (3) Aircraft maintenance management; (4) Managing the use of airspace; (5) Management of disruptions in the airline's flight network; (6) Cargo transportation management; (7) Ticket price management.

(1) Crew planning taking into account (Chutima and Arayikanon, 2020), equal workload for all employees of a given group (Captain, First Officers, Chiefs of Deck, and Cabin Staff), legal requirements regarding the maximum workload on a daily, weekly, monthly and annual basis, days off, holidays, training, simulators, medical examinations, personal preferences of individuals, taking into account, for example, family circumstances.

According to Deng and Lin (2011), crew labor costs are considered to be the second-highest, after fuel, in the airline's operations. Studies by Chutima and Arayikanon (2020) indicate that this cost accounts for 15 to 20% of the total cost of the LCC line. For the three largest European low-cost airlines (EasyJet, Ryanair, and Wizzair), these costs are lower, representing 8% to 15% of the airline's total costs (Table 1).

Table 1. *Percent of the crew cost in LCC airlines income in Europe*

Airline	year					
	2015	2016	2017	2018	2019	2020
EasyJet	12,6%	13,0%	13,9%	14,2%	14,4%	16,4%
Ryanair	8,9%	9,0%	10%	10%	13%	13%
Wizzair	7,7%	8,5%	8,6%	9,0%	9,8%	9,8%

Source: Own creation.

To reduce the costs of the aircraft crew, various models of planning and managing the work of the crew have been tested for many years, taking into account the changing legal requirements. The tools supporting these activities are new algorithms and new technologies (Deng and Lin, 2011).

(2) Management of the aircraft fleet, taking into account the size, types of aircraft in the airline's fleet, which in the perspective of long-term planning, affects, among others: what aircraft to buy or lease (manufacturer, type, passenger cabin configuration, navigation equipment). How many to order for the next period of activity and for how long to arrange receiving slots from the manufacturer or leasing

company; aircraft return policy to the lessor; the assignment of aircraft to specific routes, etc. (Serrano-Hernandez, Cadarso, and Faulin,2020).

(3) Aircraft maintenance management taking into account the types of surveys that are classified as short, medium, and long term (Sanchez, Boyaci, and Zografos, 2020).

(4) Managing the use of airspace. This area of activities is related to maintaining close cooperation with airspace management agencies. The goal is to optimize flight routes and thus save fuel and reduce the impact of passenger aviation on the environment (Rosenow and Fricke, 2019). For this purpose, an air traffic simulation environment known as TOMATO was created, which can be used by airlines to optimize flight trajectories, and by ATC to visualize these trajectories, with particular emphasis on areas where the separation between aircraft may be violated (Rosenow and Fricke, 2019).

(5) Management of disruptions in the airline's flight network. Activities in this area concern the determination of the procedure to be followed in the event of disturbances, e.g., deterioration of weather conditions, incidents onboard an aircraft, damage to the aircraft (e.g., bird strike, lightning strike), and their direction is determined each time by the policy adopted by the lines (Babic *et al.*, 2011).

(6) Cargo transportation management. Cargo transportation is an additional service offered by LCC to optimize its costs. This is the use of the lifting capacity and cargo hold space of a passenger plane for the transportation of goods common to Full-Service Carriers (FSNC). In the case of LCC lines, such a service is offered only by companies operating on the American and Chinese markets (Li *et al.*, 2012).

(7) Ticket price management. The standard strategy of an airline is to set ticket prices based on booking information (number of tickets purchased) and flight characteristics (length). LCC uses a strategy for estimating ticket prices based on a database of prices of other carriers and destinations. In the last years, a few LCCs have modified their pricing approach and started a wide-reaching process of hybridization (Corbo, 2017; Alderighi, Nicolini, and Piga, 2019).

Examples of economization methods used by LCC at the strategic level and the type of operating costs they affect are presented in Table 2.

The low-cost airline economization model can take a number of forms and costs savings can be achieved from different sources. While some identify low-cost carriers as those airlines that have a distinctive feature, such as using a single-fare class over their whole network of routes, others use other methods, such as the product and organisational architecture approach, to classify and relate key elements of airline business models.

Table 2. Examples of economization – strategic level

Economization method	Operational cost							
	Organizational cost	Fuel	Technical service	Airport fees	Handling fees	Navigation fees	Crew	Other
Use of secondary airports				X	X	X		
Separate agreements with cities / regions / local governments				X	X	X		
Use of the same type of aircraft - monotype			X		X		X	
Placing large orders for new planes from manufacturers		X	X				X	
Reselling queue seats (slots) for new planes to other airlines								X
Own training centers							X	X
Maintaining a "young" fleet,		X	X	X	X		X	
Maximum use of aircraft time every day							X	X
Medium range of operations - most often in one ICAO operational area		X				X	X	
No connecting flights - codeshare.	X				X			
No connecting flights - codeshare. Point to point flights only					X		X	
One-class B2B contracts for the crew	X						X	
Salary Scheme - Low Base + Flying Allowance.							X	
Long-term handling agreements	X			X	X			
Multiple bases - a decentralized network connections		X		X	X		X	
No sales network (websites)	X						X	
Effective flight planning tools	X	X	X			X	X	
Fixing ticket prices based on filling, prices of other carriers, and time of purchase	X							
Real-time call profitability monitoring,		X	X	X	X	X	X	

Source: Own creation.

5. Conclusion

Low-Cost Carrier business model will continue to increase growth in the next years as different from other traditional airlines. Rates advantage of the low-cost airline companies, the ability to make direct flights between short distances, short ground time, the time of landing and take Simultaneously, the flexibility offered in-flight, low maintenance costs, low airport taxes, and so on. Issues such as low-cost carriers to economically compared to another traditional carrier model will provide a more sustainable competitive advantage. Nowadays, many low-cost airlines are drifting towards hybrid models, while many traditional airlines are adopting some LCC practices.

This study is important in various perspectives. Firstly, it is preliminary study examining LCC economization models. Secondly, airline industry is one of the best implementation areas for economization models. Therefore, this study may contribute to the cognition and development of economization models. Therefore, it

is expected to give insights to further studies both in LCC economization model and strategic management literature.

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