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The Costs of Airline Service

The Short-Haul Problem

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***Abstract*— Cost of airline service consist of many parameters, including load factor, which is important for airline decision making. Short-haul flights compete with many other ways of transportation on short distances which makes demand very sensitive. This brings up the question how to set optimal costs for short haul flights.**

Keywords-costs of airlines; short-haul problem; operating costs; seat-mile costs; breakeven load factor

I. INTRODUCTION

In economic terminology cost is consumption of an economic resource. It is current and future cash outflow. All airlines as well as other businesses are interested in profit generation, which means that they must maintain their costs in detail. Economic result depends on good airlines management. Main aspect for sustainable development is airlines cost policy. Today's phenomenon is low-cost airlines. Characteristics that differs the low-cost airlines from conventional airlines are well known, but there isn't any universal solution to cut costs for low-cost airlines. Not every way of cutting costs is applicable to all low-cost airlines. In practice, every strategy of saving money may be different and depending on economic competition.

II. COSTS ANALYSIS

The costs can be divided into various groups and categories. Costs categorization is individual for each airline, depending on the diversity of its activities. It also depends on the management of airlines and internal costs sharing policy.

A. Common versus Shared Cost

Shared costs can be included in specific category based on logical principle – i.e. stewards' salaries and ticket sales are included in Passenger service category and air mail and goods manipulation are in Cargo service category. On the other hand airline costs such as pilots' salaries cannot be categorized; pilot's salary is common cost.

Cost category can be divided into more shared costs. I.e. in case of Passenger service category, cost of champagne for first class cannot be included in costs of economy class. Cargo category can be divided into its subcategories such as dangerous materials costs or animal transportation costs. Idea of cost division into common and shared costs may vary from airline to airline, depending on needs and profitability of chosen strategy.

B. Marginal, Fixed and Fully Allocated Costs

When deciding which tariff should be applied, marginal, fixed and fully allocated costs come into place. Marginal costs are additional costs of extra service or transport unit add-on. They represent change of cost in certain time frame.

Additional cost for passenger buying ticket at the time when aircraft is waiting for departure is significantly low – nearly none, except refreshment. There is no influence on crew and management salaries or aircraft depreciation. On the other side, addition of new flight into existing connection will have sizable marginal cost – from fuel and airport rates to crew salaries.

Fixed costs do not correlate with changes in transportation. They exist independently, no matter if aircraft is in the air or on the ground. In practice we consider building rents or management salaries as fixed costs.

Fully allocated costs are representing cost of transportation unit including marginal and fixed costs rate.

C. Line Haul versus Terminal costs

In order to explain passenger-kilometre cost reduction with increasing distance, we need to differentiate line haul costs from terminal costs. This is called cost cone and leads to tariff cone. Line haul costs (long hauls) directly depend on flight time and distance, when aircraft is in the air. They are divided into flight kilometres and include crew salaries, fuel price or even direct maintenance. Terminal costs include ground activity – aircraft maintenance, reservations and sales. Those costs do not depend on flight duration and should be equally distributed among passengers [1]. Total cost of flight is divided into one passenger and one kilometre. Longer distance lower cost value of one passenger-kilometre.

D. Seat-Kilometer Costs and Other Ratios

Airlines accounts include important economic information, which are the basis for some ratios that have critical importance to management [1]. One of these is the seat-kilometre costs, measure of airline performance. A seat-kilometre cost represents to management the total cost of unit in personal transportation. Other item is profitability of seat-kilometre, because passengers may obtain tickets for symbolic price. The real availability of the aircraft is expressed as passenger-kilometre.

Related ratio is called load factor - ratio of passenger-kilometre to seat-kilometre. In case of 100 seats aircraft and 1000 km flight, distance with 55 passengers on board, we speak about 55 000 passenger-kilometre. Load factor is 55%.

In order to set optimal costs we need also to focus on revenue management and financial risk management. Its purpose is to maximize revenue and minimize risks of financial loss caused by currency and fuel price fluctuations.

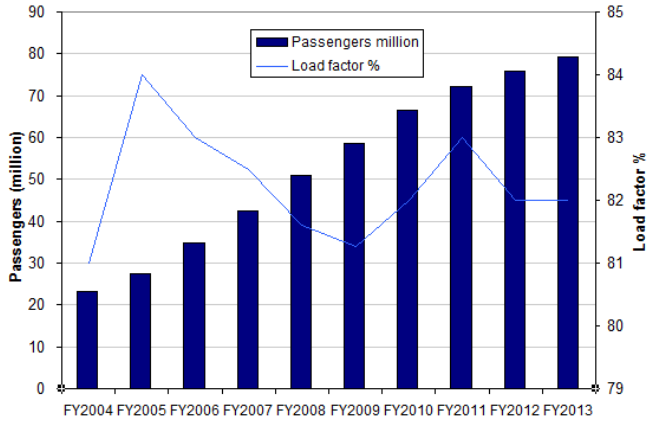

Figure 1. Ryanair development of passenger numbers (million) and load factor (%) [2]

III. SHORT-HAUL PROBLEM

Seat-kilometre costs are particularly important in the case of short-haul flights, where costs are divided into a lower number of kilometres. Short-haul flights compete with other kinds of transportation. It is reflected in a very price sensitive demand, and in the fact, that short-haul flight become unprofitable. In the worst case they produce loss. Therefore it must be on the short-haul reduced tariff. But it also needs to set tariff so as to cover the cost of flight – not loss flight. Achieve optimal "TICKET PRICE – COVER THE COSTS" ratio is very difficult. Conventional airlines must find ways to cover the costs of short-haul without increase ticket price [3].

Costs of the passenger's service and airport charges are the same, no matter what the haul the aircraft flies. Also the fuel consumption on a short-haul is not optimal. Most fuel is consumed during the aircraft take-off and landing. During the short-haul the aircraft does not manage to get optimal flight mode – ideal for the fuel consumption. The costs for more demanding flight modes are again to allocate to lower the number of kilometres.

Conventional airlines selling also long-haul tickets are confronted with these problems. Long-haul flights are not operated from all airports, but mainly from the central airports – hubs. To the hubs arrive short-haul flights from smaller airports – imported passengers to make long-haul. For maintaining the possibility of transport for passengers and the providing of full service, conventional airline are operating also short-haul flights. But these are of low-cost strategic focus. Passengers can choose between airlines, because the conventional airlines lose the portion of its clients on short-haul [4].

The expansion of low-cost airlines has caused cancelling short-haul flights operating of conventional airlines. British Airways cancelled national flights from Manchester. Air France stopped flying between London and the larger French cities such as Marseille, Nice and Toulouse. It is also a fact that low-cost operating their flights to cities where conventional airlines do not fly. Ryanair operates dozens of flights from London to Italy, but British Airways in this regard operates not more than ten of these flights. In addition to flights that are operated year round, low-cost airlines also operate short-haul replacing charters, for example Czech low-cost Smart Wings operates links to Paris, Rome, Dubai and Tel Aviv. Low-cost airlines also impends the charters, which are usually sold in holiday products packages. To maintain the share of transfer passengers still interested in short-haul operating. They try to reduce the cost of short-haul. Savings intervened any possible area - staff reductions, outsourcing passengers service, self-check-in, reducing placement agencies selling their tickets, catering restriction.

The biggest German airline Lufthansa resolved the short-haul problem handling over short-haul flights to its sub-company German wings. In a similar way advanced Spanish company Iberia. Iberia owns 46% of shares of low-cost airline Vueling. Vueling ensures the flow of passengers to central airports in Madrid and Barcelona. But this is not a universal solution. These airlines have their hubs in the major centres. It which is guaranty of more favourable position like has for example Czech Airlines – ("Disadvantaged" airlines) to choose an appropriate strategy for maintaining the short-haul flights. It is necessary is to focus on the analysis of each specific case.

IV. AIRLINES FOR AMERICA

Airlines for America (A4A) publish on its web information on their operating costs (Table I.) The vast majority of the Cost Index is derived from quarterly financial and operational information collected by US Department of Transport (US DOT). A4A is the premier trade group of the principal U.S. airlines. A4A airline members and their affiliates transport more than 90 percent of U.S. airline passenger and cargo traffic. A4A represents the collective interests of the airlines. They said: "We are not a governmental organization, nor an airline"[5]. In U.S. are costs items of airlines published through the US DOT.

TABLE I. COST INDEX [5]

A4A Cost Index for U.S. Passenger Airlines: 3Q 2013	
Operating Costs	***%***
FUEL per gallon (3.78541178 litre)	28.3
LABOR per full-time equivalent employee	23.7
AIRCRAFT RENTS & OWNERSHIP per operating seat	6.1
NON-AIRCRAFT RENTS & OWNERSHIP per enplanement	4.1
PROFESSIONAL SERVICES per available seat mile (1.609344 kilometres)	7.2
FOOD & BEVERAGE per revenue passenger mile	1.5
LANDING FEES per capacity ton landed	1.9
MAINTENANCE MATERIAL per aircraft block hour	1.8
AIRCRAFT INSURANCE as % of hull net book value	0.1
NON-AIRCRAFT INSURANCE per revenue passenger mile	0.3
PASSENGER COMMISSIONS as % of passenger revenue	0.9
COMMUNICATION per enplanement	0.9
ADVERTISING & PROMOTION per revenue passenger mile	0.6
UTILITIES & OFFICE SUPPLIES per full-time equivalent employee	0.6
TRANSPORT-RELATED per available seat mile	13.9
EMPLOYEE BUSINESS per full-time equivalent employee	1.5
OTHER OPERATING per revenue ton mile	6.6
Total Operating Costs	100

V. THE PRODUCTION RUNCTION AND FACTOR COSTS

Elementary economics uses factor of production, which is divided into land, labour, capital, and managerial entrepreneurship. Industrialized and advanced countries need less effort - different quantity of these factors - to produce the same article. The production function, then, may be defined as the relationship between the quantities of each input and the quality of output. The inputs for the airline service are: aircraft (purchase, maintenance, charges), flight crew and fuel. These factors are also major operational costs. If two airlines (American and Indian) operate the same flight between two cities, they have the same conditions, but with one significant difference – crew wages. Crew wages can represent 30% of total operating costs.

A major impact on the level of personnel costs has the status of a labour unions and work conditions legislation. British Airways, representing classical European airlines, faces strong pressure from labour unions and the strict EU restriction. In 2010 personnel costs took 22.7% share in total operating costs. The Emirates Group Company, the premium airline in the Middle East, operates in conditions, where legislation and strong demand for jobs enables adverse conditions for staff. This reduces wage costs at a minimum - in the same year, personnel costs composed only 13.2% of total costs.

On the other side there is the ability of management in advanced countries to effectively plan the use of aircraft, flight crews and other inputs. This leads to higher productivity of high wage level airlines in comparison with the productivity of the less developed country. Effective input planning competes with lower labour rates.

Another example is low-cost airline with help of its financial management, which is able to reduce labour costs to 10% of total operating costs.

VI. CONCLUSIONS

Analysis of cost items is essential for airlines financial management. Total profit of the company is dependent on knowledge of the ratios of cost items. As shown in figure 1, only the quantity - passenger numbers is not sufficient indicator. The profitability of seat-kilometre costs and load factor are indicators of real output of airlines.

REFERENCES

[1] Holloway, S.: Straight and Level: Practical Airline Economics, 3th Ed.. 2008. ISBN 978-0-7546-7258-6

[2] CAPA – Centre for Aviation: Airline Leader (online magazine). Available at: <http://www.airlineleader.com/this-months-highlights/the-battle-for-supremacy-in-europe-s-short-haul-markets>

[3] O´Connor, William E.: Introduction to Airline Economics. 2001. ISBN 0-275-96911-8

[4] Ferenc, J. – Koščák, P. – Petruf, M. – Krchová, L.: Ekonomika prevádzky letísk. LF TUKE. 2011. ISBN: 978-80-553-0704-6

[5] A4A Quarterly Cost Index: U.S. Passenger Airlines. Available at: <http://www.airlines.org/Pages/A4A-Quarterly-Cost-Index-U.S.-Passenger-Airlines.aspx>