IMPROVEMENT OF TAROM ACTIVITY BY THE REVENUE MANAGEMENT SYSTEM

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ABSTRACT

The aim of our research is to highlight ways of efficiency of activity of TAROM through implementation of the Revenue Management System.
Revenue Management System is an approach adopted by companies that want to optimize their revenue stream. This is achieved through a thorough understanding of the market, and involves plotting the direction to follow in order to have the best economic results in the same conditions of cost and space.
One of the effects that Revenue Management System and Yield Management System are trying to produce it is to generate the amount of fare that a passenger is willing to pay.
In this context, we intend to compositional how Revenue Management System if scheduled air race Bucharest – Sofia does.
In our opinion, any industry is vulnerable to circumstances independent of his will, while the consumer behaviour can be estimated at a time. Therefore, as in all businesses, also airlines must effectively manage costs and levels of income and gain profit.

KEYWORDS: *revenue management, management, TAROM*

JEL CLASSIFICATION M10, M16

1. INTRODUCTION

The Revenue Management (*RM*) is the system that predicts consumer behavior and optimizes product availability and price to maximize the profit. The main objective of the *RM* is selling the right product to the right customer at the right time for the right price. The essence of this discipline consists in understanding customers' perception of product value and accurately aligning product prices, placement and availability with each customer segment.
The Yield Management (*YM*) is the process of understanding, anticipating and influencing consumer behavior in order to maximize yield or profits from a fixed, perishable resource (Netessine and Shumsky, 2002).
YM is a large revenue generator for airline industry. It was Robert Crandall, former Chairman and CEO of American Airlines which gave this name to the system and has called it "the single most important technical development in transportation management".
The aviation industry is one of the most competitive industries but also one of the most risky, offering as many bankruptcies and failures, as well as business success.
This business model is a complex and complicated one and it works on the basis of well defined principles, profitability, and in the case of airlines, achieved by maximizing revenues and minimizing costs (Bijang et al., 2008).
Maximizing revenue will be discussed by management concepts and management capacity, as well as how these concepts can make significant contributions to the budget of the company. The

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aviation industry operates on a very different set of rules when it comes to about rates, because of the competitive environment in which it is (Belobaba, 2009).
The airlines obtain profit from the many activities designed to add value to the investments they make in people, equipment and capital (Dinu, 2011). These activities includes getting the aircraft used for the transport of passengers and/or cargo, aircraft maintenance, reservation systems, calendar (schedule)/route planning, services on board and after the flight. All these activities are intended to provide services that customers pay to travel in the most effective and safe (Dinu et al., 2010), the "key" is to make the customer understand the value of what is offered and be willing to pay in advance for travel in the future. As examples of the various services offered by major airlines, passengers can opt to pay more, for *business class* flights, which include not only the special meals and entertainment, but also an extra comfort (Doganis, 2001).
The *RM* is a system of pricing, which should bring the largest income, regardless of the individual's charges that the airline they practice at a time. *RM* is best described as a direct consequence place (space)/tariff, which means that rates are highest where seats are the most valuable (little airplane), together with airlines increase the employment of aircraft, as much as possible.

2. OBJECTIVE, HYPOTHESES AND RESEARCH METHODOLOGY

2.1. Objective:
The main objective of our research is to demonstrate how to improve the efficiency of TAROM by implementing the *Revenue Management System.*

2.2. Research hypotheses:
a. The activity of allocation / relocation of seats on TAROM flights are subject to arbitrary, based on the requests of potential clients (seen as "passengers" by the management of the Company)
b. The reconfiguration of flights by transforming them into "business flights" can generate efficient activity of passenger transportation in the TAROM Company

2.3. Research methodology:
The methodology used was an empirical study based on statistical indicators - a case study on regular air flights Bucharest- Sofia.

3. THE *REVENUE MANAGEMENT SYSTEM* (*RMS*) AND ITS CORRELATION WITH THE *YIELD MANAGEMENT SYSTEM* (*YMS*)

The *RMS* identifies, in large part, with the *YMS* that has, as its main task, the establishment of optimal policy of reservations, in order to increase both revenues and the usability of transportation capacity. At the same time, the *RMS* is particularly useful for supra-reservation practices of the flight, assuming the addition of seats over the ability of the aircraft, so that it can be covered possible vacancies which will occur after the no-show of passengers to race (especially in the case of *VIP*s and/or politicians). Being integrated to the organizational communication, the *YMS* is driven to a large extent of trying to sell seats at a rate as high as long as the market can bear this situation. Therefore, when airplanes are filled with passengers, the latter paying the highest rate possible, we appreciate that the yield of the aircraft is high, income generator for the investment of the flight of the race, from one destination to another. Instead, if the application is small, at some point, it is possible for the customer to pay a lower rate, because the demand for places on the plane no longer exists at that time. To overcome this shortage of passengers, airlines can reduce fares on airline tickets in the last moments, to achieve tariffs called last minute making a last attempt to maximize the yield of the races. While this might be, in fact, a useful way to recover an investment in the absence of any other viable alternatives, he may also have some disadvantages. Thus, at a discounted rate, there is a possibility that a customer to cancel other flights more expensive, same company and pay less than that,

long-term harm. There is also the possibility, if the airline develops, often, a last minute policy, as those who have the need to travel to delay payment of the ticket or schedule flexible, in order to "hunt", basically *last minute* tickets, so this even up to refusing to pay higher rates in the future. On the way, the company will record losses, on the medium and long terms. A particular challenge for airlines lines in the fact that the operation requires very large investments in the context where you want and a maximized profit. For example, a commercial airliner costs hundreds of millions of dollars. He must be constantly maintained, reviewed and used to maximum capacity, with a high level of employment, to produce income and, thus, the amount can be recovered after a long period of time (Wensveen, 2007). The rapid developments in aviation technology make the airline fleet to bear the high costs involved in upgrading existing equipment (Shaw, 2011). Moreover, the conditions in which the equipment is too old to be upgraded, it can reach up to their total replacement, which will generate a high cost. One of the main factors that defines how an airline, its ability is to adopt a new technology to add value and, at the same time, to provide customers with the most effective and safe methods of air transportation.

One of the other tools available to airlines to reach a high level of employment and to streamline the work consists in avoiding excessive costs, through service or even flights cancellation. For example, if a particular flight doesn't have a sufficient number of passengers, so as to cover a certain percentage of costs, would generate losses for the airline. On the way, the most logical consequence is to cancel the flight, obviously respecting the regulations in force.

The Yield Management System protects the interests of the airline, because it ensures that the planes have a high degree of decked out with passengers, what makes each flight to be profitable. At the same time, the *Yield Management System* is an approach to maximise profit, based on growth rates and occupancy of races (www.sita.com, accessed on 09/10/ 2012).

The introduction of computers in the management incomes has also added great value from another point of view, because it can be carried out estimates and forecasts that help in the decision making. Thus, for example, it is obvious that air transport demand will be very high during the holidays, when passengers are less prone to commercials the high cost of transport, often paying any price for airfare. Also, if a major event occurs in a particular geographic location (for example, a sporting event), the application to get to that point will be great and also, implicitly, and the price will be high. If, conversely, the one in which a geographical location is affected by a natural disaster or an act of war, very few people will like or will need to fight in this area; by default, the fare will be small. All of these variables must be incorporated into decision-making models that represent the best possible options to track revenue maximization. We emphasize that the adoption of such complex decisions is possible only by appealing to models of computer programs.

Another important remark is the key difference between maximizing revenue and profit. When an airline offers excessive discounts it can generate high incomes in the short term but at a closer look, given the "equation" costs involved in obtaining these revenues, the company will record, long-term losses. This is one of the reasons why so many companies get to the disastrous financial results, especially when there is the impression, through the prism of clues, that everything was fine... In fact, the impression that high revenue generating, by default, big profits, is false (Ursăcescu, Cioc, 2012).

Finally, the fast transport of people and goods relieves the quality of life and enable business relations, political and\/or interpersonal to thrive (Chişu, 2012).

All correlated with the *YMS*, relating to the inventory of flights, *TAROM* use the *SITA Gabriel* system while for booking flights the company uses the *Amadeus* system. We add the mention that both databases must be synchronized. Besides control and analysis, the *YMS*:

- sets the supra-reservation policy and fairness of its application;
- processing passengers lists are waiting for flights that will be operated over up to 30 days;
- provides solutions for groups and proposals shall consider whether confirmation on races, including recommended tariff to be applied there to.

In the *YMS* the following applications are used (www.tarom.ro, accessed on 09/10/2012):

a) *Liaison Gabriel*;

b) *AMADEUS* reservation system;
c) *SITA Revenue Management* (*SITA RM*);
d) *Excel* documents;
e) *Microsoft Office* (*Word, Power Point, Outlook, Access*).
The *SITA RM* offers a variety of options, that *YMS* may analyze and prioritize the flights, depending on the degree of employment and operating time.
On the basis of forecasts, the *YMS* analyzes and operating changes classes booking inventory *Gabriel program*.
Computerized programs provide information for each race, on the day of the flight and up to a maximum of 120 days before it, so that it can be obtained as income, for each flight section. Thus the following information is provided:

- the operating frequency
- the flight number
- the operational data
- the load at the moment
- changes from the last flight control
- changes occurring to the load forecast
- changes made to the ability of the aircraft
- the estimated revenue growth
- the waiting list
- the name of the person who worked the race question

All these information are necessary for the adoption of decisions, decisions that *YMS* are useful not only efficiency analysis races operated by *TAROM*, but also proposed solutions to increase occupancy of flights in order to obtain maximum financial results.

4. CASE STUDY: IMPLEMENTATION OF REVENUE MANAGEMENT SYSTEM ON REGULAR AIR FLIGHT BUCHAREST – SOFIA

One of the effects that *RMS* and *YMS* are trying to produce it is to generate the amount of fare that a passenger is willing to pay.
Table 1 summarizes the impact of this issue on three industries: airlines, hotels and car rental firms. Sophisticated yield management tools have been developed in all three industries, and these tools take industry-specific factors into account. However, all of these tools are based on the basic *EMSR* model is described above.

Table 1: Comparison of *YMS* applications

Parameter	Airline	Hotel	Car rental
Unit of capacity	Seat	Room	Car
Number of resource types	2-3 (e.g., 1st-class and coach seats)	2-10+	5-20+
"Capacity" at a location fixed or variable	Fixed	Fixed	Variable
Mobility of capacity	Small	None	Considerable
Number of possible prices per unit	Many (3-7+)	Few (2-3+)	Many(4-20+)
Duration of use	Fixed	Variable	Variable
Corporate discounts	Occasional	Yes	Yes
Capacity managed locally or centrally	Central	Central/local	Central/regional/local

Source: adapted from Netessine and Shumsky (2002)
In this context, we intend to compositional how the *RMS* if scheduled air race Bucharest – Sofia does.

Originally, the race was loaded in the system in the form shown in *fig. nr. 1*.
Point out that the procedures indicated high demand for *business* cab, so we take the decision to increase its capacity, with the diminishing capacity of the cab.
Along the way, he made the decision to dedicate an aircraft with greater capacity, this rising from 48 to 68 seats. Transport costs have increased by 300 Euros (3,700 Euros, 4 000 Euros). The race was operated in a 56-passengers configuration for the *Business* cab and only for 12 passengers for the *economic* cab, data being rendered in fig. nr. 2. For the *business* cab the revenue was 9 012 Euros, as follows:
54 pax * 162 euro/pax = 8 748 Euros
2 pax * 132 euro/pax = 264 Euros
8 748 Euros + 264 Euros = 9 012 Euros
For the *Economic* cab, revenues totalled are 1 552 Euros, as follows:
8 pax * 142 Euros/pax = 1 136 Euros
1 pax * 110 Euros/pax = 110 Euros
3 pax * 102 Euros/pax = 306 Euros
1 1136 Euros + 110 Euros + 306 Euros = 1 552 Euros
Thus, through the implementation of the *RMS* was generated an income of 10 564 Euros (9 012 Euros + 1 552 Euros), the cost of the race being only 4 000 Euros.
Overall, the profit obtained in this race through the implementation of the *RMS* summed up 6 564 Euros, as follows:
10 564 Euros (revenue) – 4 000 Euros (the cost of the race) = 6 564 Euros

Figure No 1: The initial shape of the race, before the implementation of *Revenue Management System*

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ro293/22jul
RO 293 MO22JUL OTPSOF 287 AT5 CDZ/SYBMKRHGLQNTUVWEX BUH015 IND Y
C LEG AV OPN MAX CAP T/B W/L GRO GRS BLK LSV LSO LSI GT  LT  PT  AT  CT SMT IND
C/DZ
  OTP AS   6   6   6   0   0       0   0              0   0   0   0 359  33
S/YBMKRHGLQNTUVWEX
  OTP AS  42  42  42   0   0   0   0   0              0   0   0   0 359  33
= OTP     48  48  48   0   0       0   0
RO 293 MO22JUL OTPSOF 287 AT5 CDZ/SYBMKRHGLQNTUVWEX BUH015 IND Y
SEG    AV CLS BKD GRS BLK W/L REQ GRO  GT LSV LSS  LT  RT SMT NTE T/R INDICATOR
OTPSOF LA C     0   0   0   0   0           2   6          33          ENL
       LA D     0   0   0   0   0           4   4          33          ENL
       LA Z     0   0   0   0   0           4   4          33          EAKN
       LA S     0   0   0   0   0           6  43          33          ENL
       LA Y     0   0   0   0   0           4  37          33          ENL
       LA B     0   0   0   0   0           6  33          33          ENL
       LA M     0   0   0   0   0          10  27          33          ENL
       LA K     0   0   0   0   0          14  17          33          EAKNL
       LA R     0   0   0   0   0           1   3          33          ENL
       LC H     0   0   0   0   0           0   0          33          REN
       LR G     0   0   0   0   0           1   2          33          RENL
       LA L     0   0   0   0   0           5   5          33          EN
       LA Q     0   0   0   0   0           5   5          33          EN
       LA N     0   0   0   0   0           1   1          33          EAKNL
       LA T     0   0   0   0   0           8   8          33          EAKN
       LA U     0   0   0   0   0           2   2          33          EN
       LA V     0   0   0   0   0           2   2          33          EAKN
       LA W     0   0   0   0   0           2   2          33          EAKN
       LA E     0   0   0   0   0           3   3          33          EAKN
       LA X     0   0   0   0   0           4   4          33          EAKN
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Source: adapted from Belobaba (2009)

Figure No2: The initial shape of the race, after the implementation of *RMS*

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RO 293 TH22JUL10 OTPSOF / AT7 CDZ/SYBMKRGLQNTUVWEX RT 2 BUH015 IND Yıb
C LEG AV OPN MAX CAP T/B W/L GRO GRS BLK LSV LSO LSI GT  LT  PT  AT  CT SMT INDıb
C/DZıb
  OTP CR   0  56  56  56   0       0   0              0   0   0   0   0  33 RNıb
S/YBMKRGLQNTUVWEXıb
  OTP CR   0  12  12  12   0   0   0   0              0   0   0   0   0  33 RNıb
= OTP      0  68  68  68   0       0   0¤¤b
RO 293 TH22JUL10 OTPSOF / AT7 CDZ/SYBMKRGLQNTUVWEX RT 2 BUH015 IND Yıb
SEG    AV CLS BKD GRS BLK W/L REQ GRO  GT LSV LSS  LT  RT SMT NTE T/R INDICATORıb
OTPSOF LR C    54   0   0   0   0           50  -3          33          ENLıb
       LC D     2   0   0   0   0            1  -1          33          EAKNLıb
       LR Z     0   0   0   0   0            1   0          33          EKNLıb
       LC S     8   0   0   0   0           30  22          33          EAKNLıb
       LC Y     1   0   0   0   0            1   0          33          EAKNLıb
       LC B     3   0   0   0   0            1   0          33          EAKNLıb
       LC M     0   0   0   0   0            1   0          33          EAKNLıb
       LC K     0   0   0   0   0            0   0          33          EAKNLıb
       LC R     0   0   0   0   0            0   0          33          EAKNLıb
       LR G     0   0   0   0   0            1   0          33          REKNLıb
       LC L     0   0   0   0   0            0   0          33          EKNıb
       LC Q     0   0   0   0   0            0   0          33          EKNıb
       LC N     0   0   0   0   0            0   0          33          EAKNLıb
       LC T     0   0   0   0   0            0   0          33          EKNıb
       LC U     0   0   0   0   0            0   0          33          EKNıb
       LC V     0   0   0   0   0            0   0          33          EKNıb
       LC W     0   0   0   0   0            0   0          33          EAKNıb
       LC E     0   0   0   0   0            0   0          33          EAKNıb
       LA X     0   0   0   0   0            9   9          33          EKNıb
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Source: adapted from Belobaba (2009)

A technique that was developed for the airline industry named "*Expected Marginal Seat Revenue*" (*EMSR*) analysis by Belobaba (Belobaba, 2009): for two fare classes with prices r_L and r_H (r_H is the higher price, \$159, while r_L is the lower price, \$105). A random variable, *D*, represents the distribution of demand at the high fare. Since there are just two fare classes, the optimal booking limit for low fare class is equal to the total capacity minus *Q*.

$$\frac{B}{B+C} = \frac{r_H - r_L}{r_L + r_H - r_L} = \frac{r_H - r_L}{r_H}. \quad (1)$$

From the newsvendor analysis, the optimal protection level is the smallest value *Q** such that:

$$F(Q^*) \geq \frac{B}{B+C} = \frac{r_H - r_L}{r_H}. \quad (2)$$

After testing the research hypotheses, we concluded that both of them are confirmed.

5. CONCLUSIONS

In our opinion, have highlighted a few conclusions, namely:

1. as demonstrated, any industry is vulnerable to circumstances independent of his will, while The consumer behaviour can be estimated at a time. Therefore, as in all businesses, also airlines must effectively manage costs and levels of income and gain profit;
2. regardless of the prognosis and *RMS* recommendations, *TAROM* must put on its fundamental values: safety, punctuality, quality and passenger comfort, the values that define the company and according to the statistics, a place among the firsts of Europe;
3. the *YMS* are representing an approach to maximise profit based on increasing tariffs and employment racing.

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