MISUNDERSTANDINGS DUE TO A CODESHARE BETWEEN TWO BRAZILIAN AIRLINES IN RIO DE JANEIRO INTERNATIONAL AIRPORT

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Abstract

A code share agreement can be defined as more than one airline using the same plane

for different flight numbers. It has been in use for some time by airlines all over the

world. The practice has become ever more important as it has been used by large

alliances between airlines (Star Alliance, Sky One, etc). Although it may have some

advantages it is prejudicial to the competition between carriers. In this work an

empirical study is presented covering the main code share agreement used in Brazil. Its

consequences both for the companies but mainly for passengers are studied here. The

case study for this work is the code share agreement between VARIG and TAM for

most of their domestic flights for quite some time. Data for the study were collected at

Rio de Janeiro international airport. The assembled data show how passengers can be

misled. Airborne traffic data during and after termination of the agreement are also

shown.

Key words: Code share, competition, air traffic

1. INTRODUCTION

Code share is a practice much in use by all airlines and can be understood as carriers using the same plane for different flights. This paper covers mostly the code share agreement that VARIG and TAM put in practice over a period of time. Data gathered at the Rio de Janeiro International Airport are used. Traffic changes caused by the existence of the code share agreement and those that took place after its termination are analysed. Misleading information regarding the flights of those two carriers that were given to passengers is also shown. The misleading information received by passengers is one of the ill effects caused by the concentration of air transport as shown by Espírito Santo Jr. (2000) and Espírito Santo Jr. et al. (1998).

Data to be analysed were gathered one week before and one week after the end of the code share agreement. Flights that clearly used the same aircraft were aggregated into a single flight for analysis purposes. This meant that information supplied by the airport flight displays had to be scrutinized. It was possible, thus, to reach an acceptable approximation of the number of flights that actually left the airport in the period during which the code share agreement was enforced. The corrected table is compared to the display shown for the benefit of passengers. As it will be shown, enforcement of the code share agreement leads to the over evaluation of the carriers involved.

This is an empirical study focusing on passengers' perception. For a study from the point of view of carriers see, for instance, either Iatrou and Alamdari (2005) or Kleymann (2005). However, these studies look at alliances from a general point of view rather than simple code share agreements. For a study in which the main focus is the airport see Veldhuis (2005), who analyses the consequences of the Air France/KLM

alliance for the Schiphol Airport in Amsterdam.

In the following section the history of the VARIG-TAM code share agreement as well as other less important agreements will be looked at. A brief revision of other studies on the subject will be included as well. Section 3 will show all data as gathered and after they were scrutinized. Final main conclusions will be presented thereafter.

2. THE VARIG-TAM PARTNERSHIP AND THE USE OF CODE SHARE AGREEMENTS

VARIG was one of the most traditional Brazilian airlines. Owing to a long series of management mistakes it fell into a serious financial crisis that ended up in its sale and becoming a much less important carrier in 2006. At the end of 2002 VARIG owed 6 billion *reais,* 60% of it to the Brazilian federal Government.

Other carriers went through similar financial turbulence caused mostly by demand retraction after the events of September, 11th (to study aeronautical policies caused by those attacks, se, for instance, (Hätty & Hollmeier, 2003), or Goodrich,(2002)). As occurred in the United States since the 70´s (Francis, Dennis, Ison, & Humphreys, 2007) the Brazilian traditional carriers suffered (since 2000) from the competition of low fare – low cost airlines. The very first one in Brazil was GOL, that soon after it was created had already a market share of 20% (Evangelho, Huse, & Linhares, 2005).

Trying to find a solution for the financial crises of the more important airlines, the Brazilian federal government proposed at the beginning of 2003 a merger of VARIG and TAM. This proposition aims to create a quasi monopoly in a movement inverse to

the one done by European Union (Featherstone & Papadimitriou, 2007). The two companies strongly resisted the idea. Nevertheless, both accepted the idea of a code share agreement covering practically all their domestic flights. The code share agreement was heralded as a preliminary step for a future merger. With this measure carriers could restructure not having to give up market share living as they had lived. The route in which immediate effects were felt was the air bridge Rio - São Paulo. In Soares de Mello et al (2006) work this route was analysed using Data Envelopment Analysis and inverted frontiers. It was shown that the code share agreement brought about losses for passengers. This code share agreement had different characteristics from those applied to international flights whenever route complementarities exist. What happened was that one the carriers sold tickets for flights operated exclusively by the other carrier in a similar situation to that described by Ito and Lee (2005) for the American air travel market.

During 2005, CADE (the Brazilian authority to promote competition) imposed the end of the code share agreement and ordered the combined operations of the two companies to end within 90 days. This measure was taken because it was deemed the agreement to be detrimental to the other carriers, to the competition and to passengers. The fact that TAM and VARIG had decided not to pursue the merger process was also taken into consideration.

TAM and VARIG's code share agreement was not the only one in existence among Brazilian flights. There were as well other code share agreements of both airlines with international carriers. Those of VARIG were included in then membership of Star Alliance, a worldwide commercial partnership of several carriers. So were (and still are) those of TAM with international carriers such as American Airlines and Air

France. In March 2007 VARIG had left Star Alliance and kept share agreements only with Pluna (its affiliate until recently) and Air Canada. In April 2007 its agreement with Air Canada was terminated.

Generally speaking, code share agreements are very profitable for the participating carriers. Sharing routes indeed decrease costs, increase occupancy rates and decrease competition. It allows the carrier to expand its operations network as the carrier can redistribute its planes avoid superimposed timetables. A factor that benefits both carriers and passengers is the possibility of offering more connections for more destinations as one carrier uses the flights of another.

However, even in a partnership carriers are completely different and can follow different paths to achieve their management objectives. In this case study, the two airlines kept their frequent flier programmes separate. Joining the two programmes could have been one of the few benefits for passengers arising from the code share agreement. However, the mere existence of these programmes can be taken as a hindrance to competition (Fridstrom et al., 2004).

The advantage for passengers who travel in companies that form alliances, with no route duplication, is analysed by Brueckner (2003). The author shows that one of them is the existence of routes that supplement others (i.e., the flight of a carrier starts where the flight of another ends). Other studies concerning alliances are carried out by Whalen (2007).

A code share agreement as established between VARIG and TAM has, among others, the following drawbacks:

- Consumer disinformation: The passenger buys a ticket for a carrier and, as he/she boards the flight, the carrier is another. Thus, passengers' preferences are

disrespected.

- Competition: With a code share agreement, carriers operate as if they were just a single airline. As those companies are the only ones to operate along some routes passengers are left without choice and have to accept companies' requirements such as price, time table and other services.

The first of these drawbacks affects mostly passengers not much aware of the airline market rules and how air transport works.

3. CODE SHARE ANALYSIS AT THE GALEÃO INTERNATIONAL AIRPORT

This work analyses the information given by INFRAERO on the panels of an airport terminal concerning time tables, destinations, carriers and flight numbers. The airport surveyed was the "Rio de Janeiro International Airport, António Carlos Jobim", better known by its previous name of "GALEÃO". Its IATA code is "GIG".

An analysis involving all flights mentioned under VARIG or TAM was carried out. Those that operated without a doubt under a code share agreement were identified. Departure times, destinations, intermediate stops and flight numbers were used to identify these code share flights. For instance, the two flights shown on table 1 are in fact just one without anyone being able to say which carrier really operates the flight. This information shows that the customer can believe he has two flight options where, in fact, he has only one. The passenger does not even know which carrier will operate the flight.

Table 1 here

To show all flights operated under the code share agreement by the two carriers under analysis, a fictional company was imagined to exist VARIG +TAM whose operations are the flights jointly operated by VARIG and TAM. So the flight shown on Table 1 becomes a flight of this fictional airline.

Table 2 shows all data before and after the scrutiny carried out by the analysis already mentioned and in which the real number of flights operated by each company are shown. This table shows the flights during a period of six hours.

Table 2 here

It can be clearly seen that the number of flights really offered is far below those that non scrutinized information showed. Instead of having a total of 112 flights the reality is that there are only 86. Furthermore, the number of flights offered by TAM + VARIG together is less than half the total, in oppositions to what gross data before scrutiny seemed to indicate. The number of flights really offered by each of them cannot possibly be determined using only airport terminal panel information.

Finding out the number of those flights would require access to the bookings system of each carrier or, at least, the visual count of the planes that had taken off. Flights shown as purely VARIG or TAM show only those that do not operate in code share or that could be identified as such as will be seen hereinbelow.

Whereas the code share arrangement shown on Table 1 does not allow the real carrier to be identified, that is possible in other cases. Those are the ones that display small different details as in the example of Table 3. Two flights with the same number

and departure time have different destinations: this is a flight with one or more intermediate stops. Part of the flight, up to last the common intermediate stop, operates under the code share agreement. Henceforth as a one carrier flight, this being the real operator. It should be emphasized that the general public cannot always make this deduction and keeps on being misinformed.

Table 3 here

Table 3 shows that both flight 1 and flight 2 are operated by VARIG. Flight 1 is a combined operation up to Curitiba. From then on, to Chapecó it is a VARIG flight only. On the other flight, the common leg is up to Belém and the Belém - Macapá stretch is VARIG only.

Other flights allow to deduct which is the carrier but, for that, further market knowledge is required. Table 4 shows some of those code share flights, one of hem being a three carrier one.

Table 4 here

Flight 1 is a code share arrangement among TAM, VARIG and American Airlines (AAL). To identify which airline really operates the flight, it must be taken into account that TAM has commercial agreements both with VARIG and AAL but VARIG has no agreements with AAL. For that reason, TAM is the only one that can operate this flight. Flight 2 shows a code share arrangement between TAM and American Airlines. As the flight is shown on terminal 1 flight panels and TAM uses only terminal 2 the real

flight operator is American Airlines.

Nearly a week after the VARIG TAM code share agreement ended, new data were gathered, the week day and the time interval for data gathering being the same. The aim was to obtain objective data on each carrier's share in the airport traffic. Whether the real share of other carriers had changed substantially was another point of interest. Gathered data ought to reflect a more realistic assessment of the code share agreement than the scrutiny on the data obtained in the first instance. However, the information shown on the terminal panels still showed a significant number of shared flights. As it seems unlikely that CADE's orders were ignored, the possibility of errors in the airport information system cannot be discarded. An attempt to gather data at a later stage proved to be useless. The carriers (particularly TAM) had already reformulated their operational grids (Avião-Revue, 2005) and that destroyed any validity to data comparison. Clear proof of the reformulation was the large number of TAM Fokker F100 aircraft that started operating from GIG. During the existence of the code share agreement such plane were rarely seen at this airport.

Table 5 shows a condensation of data gathered during he second day. Three different code share agreements are evident, all of them involving VARIG. The first one with TAM, as already mentioned, which can either be an error of the information system or a special authorization issued by CADE.. Another existed with UAL (another Star Alliance member like VARIG) and a third with its then affiliate Pluna.

Table 5 here

Comparing Tables 1 and 5 one can clearly identify the increase in flights as

being those isolated as VARIG or TAM flights.

It should be emphasised that there are other failings in information that are not found out by the type of analysis used. Carriers like ALL NIPPON AIRWAYS (ANA) and ALITALIA (AZA) do not operate from or to GIG, yet they were shown on the flight panels. There was obviously some form of code share (at least in the Rio – São Paulo leg) but the analysis methods that were used did not identify it and they were not even included in the objectives of this study.

4. FINAL CONSIDERATIONS

All the analysis carried out in this paper show that the information given on the panels of the Rio de Janeiro International Airport is not to be completely trusted. On the one hand they can mislead passengers, mainly those with less experience (who may not even be interested in such data and only wish to know at what time and from which gate they will depart). This deteriorates the quality of the service offered to the passengers and, as state by Martin-Cejas (2006), "tourism service quality begins at the airport".

On the other hand, the use of these data in quantitative analysis and mathematical models has to be very careful requiring pre processing techniques, as used here, or even more sophisticated ones.

Second day data, even taking into account the possibility of errors, show that TAM and VARIG as a whole suffered from an apparent share decrease (truthfully, calculated share gives a better reflection of reality). This situation came to affect even carriers that were not part of the agreement. For instance, gross data for the first day in which they were gathered show that GOL had a share of 22.32% of airport traffic. Mere scrutiny increased that share to 29.07%. On the second day, the share became 24.42%,

caused partly by the data being more realistic and partly because the carriers that were part of the code share agreement had increased their individual share.

Finally, despite this study having been based on the data of a single airport, nothing hints at this being a situation peculiar to this airport. Superficial surveys show that Guarulhos airport exhibited a similar behaviour. Internationally, identical behaviours were also reported at the Portuguese airports of Faro and Funchal, despite the carriers in question not being the same. Curiously, the Santos Dumont (Rio de Janeiro) did not follow suit because it always indicated which company operated the flight even for the so-called air bridge.

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Table 1: Example of code share flights shown at the airport

Carrier	Flight	Time	Destination
TAM	3372	13:50	Belo Horizonte
VRG	3372	13:50	Belo Horizonte

Table 2: Percentage and number of flights of flights for each carrier, particularly of those being analysed

Before Analysis			After analysis		
Carrier	Number of flights	Flights in the period (%)	Carrier	Number of flights	Flights in the period (%)
VRG	37	33.04%	VRG	18	20.93%
TAM	28	25.00%	TAM	7	8.14%
			TAM+VRG	17	19.77%
Others	47	41.96%	Others	44	51.16%
TOTAL	112	100.00%	Total	86	100.00%

Table 3: Examples of partial code share

	Carrier	Flight	Time	Destination
Flight 1	TAM	2256	19:20	Belém
Flight 1	VRG	2256	19:20	Macapá
Flight 2	TAM	2161	20:00	Curitiba
Flight 2	VRG	2161	20:00	Chapecó

Table 4: Some code shared flights that could be identified

	Carrier	Flight	Time	Destination
Flight 1	TAM	3374	16:55	Belo Horizonte
Flight 1	VRG	3374	16:55	Belo Horizonte
Flight 1	AAL	7648	16:55	Belo Horizonte
Flight 2	TAM	8112	20:55	Miami
Flight 2	AAL	904	20:55	Miami

Table 5: Percentage and number of flights of flights for each carrier after the second gathering of data

Carrier	Number of flights	Percentage of flights	Carrier	Number of flights	Percentage of flights
AAL	2	1.98%	UAL	0	0%
AFR	1	0.99%	LLB	1	1%
ANA	1	0.99%	AAL	2	2.33%
ARG	4	3.96%	AFR	1	1.16%
AVA	1	0.99%	ANA	0	0.00%
AZA	1	0.99%	ARG	4	4.65%
BAW	1	0.99%	AVA	1	1.16%
BRB	1	0.99%	AZA	0	0.00%
COA	1	0.99%	BAW	1	1.16%
DLH	1	0.99%	BRB	1	1.16%

GLO	21	20.79%	COA	1	1.16%
IBE	1	0.99%	DLH	0	0.00%
KLM	1	0.99%	GLO	21	24.42%
LAN	4	3.96%	IBE	1	1.16%
LLB	1	0.99%	KLM	1	1.16%
PUA	1	0.99%	LAN	4	4.65%
TAM	22	21.78%	TAM	14	16.28%
TAP	1	0.99%	PUA	0	0.00%
UAL	3	2.97%	TAP	1	1.16%
VRG	32	31.68%	VRG	25	29.07%
			TAM+VRG	4	5%
			VRG+PUA	1	1%
			VRG+UAL	2	2%
TOTAL=	101	100.00%	TOTAL=	86	100.00%