Téoros
Revue de recherche en tourisme

Some Questions of Ethics related to Global Distribution Systems

Chris Lyle

Citer cet article

Lyle, C. (1995). Some Questions of Ethics related to Global Distribution Systems. *Téoros*, *14*(3), 35–39. https://doi.org/10.7202/1075086ar

SOME QUESTIONS
OF ETHICS
RELATED TO GLOBAL DISTRIBUTION SYSTEMS
Chris Lyle

Chris Lyle
is the Chief of the Economics
and Statistics Branch with the
International Civil Aviation
Organization in Montreal.
The views expressed here
are his own.
(e-mail: atb@ICAO.org)
(http://www.com.org/~ICAO)

The origin of "Global Distribution Systems (GDS)" lies in the computer reservation systems developed by individual airlines for the purpose of controlling their seat inventories and sales through their own ticket offices. Only at a later stage were the possibilities for using the systems for distribution through travel agents recognized and exploited.

Coincident with developments in automation air transport entered an era of progressively reduced government regulation and increased competition, leading both to a greatly increased reliance by airlines on travel agents and to a greatly increased reliance by travel agents on computer reservation systems as their primary information source. In the United States today well over 80 per cent of airline tickets are sold through travel agents and 97 per cent of travel agents are automated. In other regions these proportions are lower, but they are growing fast.

Liberalization of air transport was also associated with consolidation and globalization, both of airlines and of their reservation systems, and today there is an oligopoly of four systems with global reach (in some cases achieved through partnership with a regional system):
• Amadeus/SystemOne
• Galileo
• SABRE
• Worldspan

Ownership of each of these systems is dominated by a few airlines (in the case of SABRE by a single airline) from the United States and/or Europe. A further system, GETS (owned by the Société internationale de télécommunications aéronautiques, SITA, a non-profit multi-airline owned company), is in a slightly different category in that it is designed primarily for smaller airlines to distribute their product in their own countries and its activities are essentially limited to Africa, eastern Europe and Latin America.

An important factor is that development of GDS was airline driven and all GDS are effectively airline controlled. But the airlines concerned are well aware of the additional revenues that can be obtained through their GDS by the inclusion of other elements of the travel and tourism product such as car hire, hotels, theatres, etc, and these are now commonly accessible. However, airline reservations remain the dominant source of travel agency revenue and, for various reasons, automation is far more dominant in airline reservations than in other travel and tourism services.

GDS have provided substantial benefits for air carriers, travel agents and passengers alike. They enable information to be distributed and reservations to be processed in an extremely efficient manner, and in many markets they have become an essential business tool. However, there has also been some abuse of GDS which has led, actually or potentially,

• as far as airlines are concerned, to a detrimental impact on fair and equal opportunity to compete

• as far as travel agents are concerned, to misrepresentation of the information available to them

• as far as GDS vendors are concerned, to abuse of market power offered by the monopoly characteristics they maintain in many markets.

The ramifications are farreaching, and have included retaliatory action by airlines and travel agents as well as regulatory action by governments. In a few cases travel agents have even managed to set up their own reservation systems which have the merit of including a wide range of national travel information ("destination databases", etc) beyond that covered by a GDS, but including access to a GDS as one element in their system. However, each of these travel agency systems in effect distributes just a single GDS, which may or may not be the best one for the market according to the transaction concerned. And these "destination databases" are not generally accessible from other countries (a "receiving" agency understandably not wishing to provide the opportunity for its commission to go elsewhere), thereby restricting the availability of valuable information for consumers.

As for government regulation, in most economic sectors the concerns raised would be covered by national competition law and international trading arrangements. GDS are special to the extent that their dominant function relates to the sale of air transportation, the commercial operation of which is based on special regulatory regimes, notably so in the case of international carriage which is largely governed by a vast number of bilateral air services agreements between States. And one of the key issues relates to the selection and ordering of flights on the screen, which can be used to impair the value for airlines of their rights in these agreements to market access and to "fair and equal opportunity" to compete. For the purposes of this brief article screen display for airlines will serve as an illustration of one of the fundamental ethical questions related to GDS: are they fair to airlines? to travel agents? and, last but not least, to passengers?

Evolution of screen display

In the early days of civil aviation, information on airline schedules and fares was distributed by individual airline companies in the form of printed timetables or newspaper advertisements. Since the flights and fares were few and simple and the choice of airlines and routings was very limited, passengers could thereby readily be made aware of all the products offered. As an increasing plethora of fares and services became available and airline journeys involving two or more airlines became more commonplace, however, a need was seen for consolidation of the various airline timetables for easy reference.

For many years this need was met by publishers of multi-carrier schedule or tariff guides such as the ABC World Airways Guide, the Official Airline Guide (OAG) the Air Tariff and the Air Passenger Tariff, which included the schedules and/or fares of the vast majority of airlines worldwide. With passengers seeking guidance in selecting the various options available, and with airlines concomitantly seeking to sell their services in a wide variety of locations, the combination of the travel agent and the multi-carrier guide became an increasingly common tool for marketing airline tickets.

Both the ABC and the OAG, in presenting integrated schedule information, listed for each citypair: first, direct flights (whether nonstop or stopping) in order of departure time; and second, connecting flights in order of departure time; together with indicators of the days of the week on which the flights operated. All of the service options for a citypair, even for those citypairs with the most extensively listed range of options, could readily be encompassed on a single page of a printed airline guide. Very few substantive concerns have ever been raised by passengers, airlines or governments about the approach to listings used by these guides.

A basic problem appears to have been created, or at least exacerbated, by the electronic age. Travel agents now increasingly rely on information provided through GDS which are capable of giving easy access to much greater ranges of service options than the printed guides. At the same time the concept of an integrated schedule display for airlines has been maintained (in some cases through government action), in marked contrast to the reservation systems for hotels or rental cars, where the travel agent is simply presented with a switching facility between the reservation systems of individual hotel chains or car rental companies without an integrated display.

As regards the integrated airline displays, recognizing that relatively few of the service options available will generally be of interest to a particular passenger, GDS vendors have found a need to move away from the listing procedures used by the printed guides in order to provide the travel agent and its client with selective listings of service options, ranked in a manner which the vendor presumably feels will most adequately reflect customer preferences.

A problem arises, however, in that there is only room on the computer terminal for presentation of a very few options at one time (in some cases no more than four flights on the screen at a time). Travel agency staff, who frequently operate with very tight time and resource limited budgets, and despite their specialist knowledge of particular markets, naturally have a tendency to select from the most readily accessible flight, one from amongst the first options presented (the probability of selection of the first flight on a screen being higher than the second flight, the probability of selection of a flight from the first screen being higher than a flight from the second screen, and so on). The ranking of flights on the screen by the GDS vendor can therefore be of critical commercial importance.

The days of the most blatant abuses of ranking, whereby an airline owning a reservation system might list its own flight first and that of a competitor lower down or even not at all, are past, ousted not only by government regulations (notably in Australia, Canada, Europe and the United States) but by the needs of travel agents to have a comprehensive and nondiscriminatory data base to best serve their clients.

Nevertheless, there remain a wide variety of screen display criteria in existence and, interestingly enough, none of them apparently follows the ordering used in the printed guides. Some of these variants have created considerable concerns, with airlines reporting examples of what they perceive as significant bias against their own operations, and passengers reporting misrepresentation to them of services. Consequently, a number of governments are insisting that the ordering of flights on a screen must be prescribed by regulation. The question then is what order, if any, should be prescribed?

Illustrating the problem

Let us first show the impact of various possibilities on a very straightforward, single sector operation, Montreal-Toronto. If flights are simply listed in chronological order during the day, as was the case in the ABC and OAG, in the summer of 1995 you might have got the listing appearing in Figure 1.

This listing has a number of interesting features. For example, right at the top, Air Canada (AC) flight 117, which is scheduled to leave at 0645 is listed ahead of Canadian Airlines (CP) flight 961, which is scheduled to leave at exactly the same time but with a one minute longer flight duration. In the spring of 1995, Air Canada's flight had been scheduled as being three minutes slower than in the summer, arriving at 0755, and on the same listing appeared after the Canadian flight!

The third flight listed, AC1371, is associated with an asterisk to indicate that it is "codeshared"; in practice it is an Air Ontario Dash 8 service to Toronto Island Airport which, despite being longer and arriving (in metropolitan Toronto) later, sneaks in ahead of the new Astoria (S3) 737 service because of its earlier departure time.

But perhaps the passenger does not wish to get up at crack of dawn for an 0645 departure and would prefer to leave around, say, 0900. With the chronological listing in Figure 1 a travel agent would have to scroll down to the middle of the third screen to find an 0900 departure. In practice, all GDS

make the search easier by catering to a departure (or arrival) time request, but the question is how to do this. If the GDS vendor were simply to list all flights with a departure time of 0900 or later, the first screen listing might appear as in box "A" in Figure 1, with Air Canada flight 405 at the top. With this approach Astoria flight 711, which in practice is nearly as attractive from a scheduling perspective as Air Canada flight 405, and more so than all subsequent flights listed, would not appear at all!

GDS vendors improve on this approach by opening a "window" starting a prescribed period (often 2 hours) before the requested departure time. This can, however, only be a partial remedy. For example, in the high density market illustration of Montreal Toronto, opening the listing 2 hours before the requested departure time of 0900 would produce Screen 2 in Figure 1 as the first screen and the flights closest to 0900 would still not appear on that screen. Conversely, in a lower density market a flight departing just over two hours before the requested departure time would be listed after one leaving several hours after the requested departure time or perhaps not at all.

Another approach is to list the flights in order of the "displacement" between the requested departure time and the actual departure time, the result for the Montreal Toronto illustration being shown in Figure 2. In this listing, Astoria flight 711, being only 15 minutes away from the requested departure time of 0900, appears immediately after Air Canada flight 405.

In practice this approach, where applied, is usually taken one step further to accommodate not only displacement, but also the elapsed time of the journey, which is particularly important where stopping and connecting flights are concerned because of the delay for the stops and between connections. Under this approach, as can be seen from Figure 2, a requested departure time of 0930 would place CP863 (displacement 0020, elapsed 0110, total 0130) first, ahead of the slower (Air Ontario Dash 8) AC1377 (displacement 0005, elapsed 0128, total 0133).

The effect of this approach is illustrated in Figure 3, relating to Montreal Miami. The flights are listed in the chronological order that they appear in a printed multi-carrier guide, but four out of five of them are early morning departures and would clearly not suit someone wishing to travel in the afternoon. The "displacement plus elapsed" approach for a requested departure time of 1600 would, however, list the one afternoon flight first and the 0850 departure second (and would list the two 0655 departures before the 0705 one because of the time taken up by the latter for a stop en route).

The Montreal-Miami listing in Figure 3 also provides a different example of a "code-shared" service, flight AA479 being operated by American Airlines but also being marketed as CP6248 by Canadian. Discussion of the pro- and anti-competitive aspects of code-sharing is beyond the scope of this article, but one effect of it (often called "screen padding") can be to drive a competitor's flight down the ranking (in this case the "double listing" of the same flight pushes UC361 from Screen 1 to Screen 2).

The examples in Figures 1 through 3 are extremely simple, involving solely non-stop or direct services. They nevertheless illustrate an issue which can become crucial in markets with a variety of service options, particularly where there are few if any direct flights and connections are the norm. Just as an example of what can happen, a request from one GDS for Montreal Bangkok options produced a printout of more than 50 screens' worth of options and the flights with the shortest elapsed time were not found until the 30th screen!

The concept of using displacement plus elapsed time as the ranking criterion would have been of particular value in this instance. However, this concept has not been taken up by governments (one possible reason being that, at least at first sight, it is not as transparent as a chronological departure or arrival time listing) and those GDS that use it have added some somewhat subjective quirks to the basic formula. For example, in the case of connecting flights, they will use the true displacement plus elapsed time (including the time between connections) for "on-line" (same airline) service but may add an artificial "penalty" of 30, 60, 90 or even 120 minutes in the case of an interline service, depending on their perception of the consumer preference for on-line service in the market concerned. What is more, where there is a connection between two airlines which share a common code over the whole journey concerned (the most common application of code-sharing) the connection is usually treated as "on-line", thereby gaining ranking and competitive advantage; a measure of the extent of this advantage may be ascertained from the phenomenal growth of the multitude of code-sharing arrangements now in place right around the world.

Seeking a solution

Some governments, notably in Europe, have taken a somewhat different approach, also differing from the ABC/OAG formula, by prescribing that service options for the day(s) requested must be listed in the following order: firstly, all non-stop flights listed in order of departure time; secondly, all direct flights, not involving change of aircraft, listed in order of elapsed journey time; and thirdly, connecting services, listed in order of elapsed journey time. While this formula has the advantage of being simple, precise and transparent, its very simplicity means that it cannot solve all the problems. For example, the assumption that a non-stop flight is always preferable to a stopping one has considerable validity in a dense, short-haul market, but has less credibility in other markets (as a very simple example, for a passenger wishing to depart in the afternoon from Montreal for Miami, the 1630 one-stop departure in Figure 3 may be preferable to the 0850 non-stop). And while elapsed time is clearly a key parameter, in the absence of a departure/arrival related parameter (for example, displacement), a listing can remain very confusing given the multitude of direct and connecting flight options that are on offer in many markets. Also, in the absence of a requested departure or arrival time, GDS vendors generally apply a "default" time which may vary from market to market and could be used in a discriminatory manner to promote the flights of particular carriers in the listings.

The prescriptive approach to screen display by governments thus goes some way to precluding the worst abuses, but the

benefits of consistency and simplicity are countered by the varying requirements of different markets (e.g. short-haul versus long-haul, dense versus thin), the wide range of passenger preferences, and the technological and entrepreneurial room left to get round the prescription. Governments would need micro-manage prescription in order to cover all the angles (for example in defining the nature of the "windows" according to circumstance). This is exacerbated by the ability of a travel agent to amend the screen presentation at his or her terminal; some governments have directed that any display other than a "neutral" one provided by the GDS vendor may only be used to meet a preference indicated by the passenger but this is in practice almost impossible to police, and a travel agent can sometimes be influenced by the commission levels paid by different airlines as well as by passenger needs.

Other governments, notably in Australia, Canada and the United States, have taken the view that, subject to general provisions that displays not be influenced, directly or indirectly, by the identity of carriers or airports, the particular methodology used for ordering flights should be left to the marketplace (as long as it is consistently applied).

Conclusion

In practice, as passengers become more knowledgeable about air travel, their reliance on an integrated ordering of flights to determine their airline and flight selection is likely to diminish. For example, many corporate passengers are more interested in a screen display which offers them a means of earning "frequent flyer" miles (often at some sacrifice of schedule convenience) and most tourists in one which offers them the lowest possible fares rather than the ideal schedule (and these fares may not necessarily be published airline fares since some travel agency consortia have negotiated "private" fares which are held separately in the GDS).

This knowledge is likely to increase rapidly with the spread of information on schedules and fares directly to potential passengers through personal computers and the INTERNET. Ticketing, sales and promotion costs have risen to the point where they currently represent, on average worldwide, over 20 per cent of the costs of operating international passenger services (for comparison, aircraft fuel costs represent some 13 per cent), and the past couple of years have seen major developments in distribution of the airline product as airlines focus on reducing costs in an increasingly competitive environment. Some airlines withdrew from participation in GDS in the United States and the vendors concerned were obliged to introduce a new level of "no-frills" participation to get them back. Also, several airlines have established reservation sites on the World Wide Web, in effect going full circle to the early days of individual airline advertisements in the press, although they have now been followed on to the INTERNET by some travel agents anxious not to be bypassed and even by some GDS themselves. And recently no less a power than Microsoft is reported as setting up an electronic travel mart which poses a potential threat to the existing GDS, which are naturally concerned by a competitor that is not subject to the same regulatory regime; a software company clearly lies outside the regulatory authority of aviation officials.

As in so many other activities today, life is becoming more complex for travel agents and passengers alike, and one consequence is "information overload". In the light of this complexity and the difficulty of hitting the fast-moving targets of technological advance and entrepreneurial ingenuity, government regulators may have to rely increasingly on a competitive marketplace to counter abuses which threaten the fundamental ethic of fairness for all players in the GDS game _ vendors, airlines, travel agents and passengers.

Reference
International Civil Aviation Organization, Code of Conduct for the Regulation and Operation of Computer Reservations Systems, ICAO Doc 9587 (pp 30-47), 1992.

Chris Lyle est le responsable de la section économique et statistique à l'Organisation de l'aviation civile internationale

FIGURE 1
Montreal - Toronto
Summer 1995, Requested Departure Monday

Flight	Dep	Arr
	Screen 1	
AC117	0645	0752
CP961	0645	0753
AC1371*	0645	0815
S3701	0650	0755
	Screen 2	
AC401	0700	0807
CP110	0700	0808
AC433	0730	0840
CP859	0750	0900
	Screen 3	
AC403	0800	0907
S3711	0845	0950
AC405	0900	1005
AC1377*	0925	1053
	Screen 4	←A
CP863	0950	1100
AC407	1000	1105
CP865	1050	1156
AC109	1100	1218

FIGURE 2
Montreal - Toronto
Summer 1995, Requested Departure Monday 0900

Flight	Dep	Arr	Displacement
	Screen 1		
AC405	0900	1005	0000
S3711	0845	0950	0015
AC1377*	0925	1053	0025
CP863	0950	1100	0050

FIGURE 3
Montreal - Miami
Summer 1995, Requested Departure Tuesday

Flight	Dep	Stops	Arr	Requested Dep 1600		
				Displacement	Elapsed	Displacement plus elapsed
	Screen 1					
AA479	0655	0	1028	0905	0333	1238
CP6248*	0655	0	1028	0905	0333	1238
J7305	0705	1	1140	0855	0435	1330
AC930	0850	0	1215	0710	0325	1035
	Screen 2					
UC361	1630	1	2130	0030	0500	0530