

Economic And Political
Analysis of Computer
Reservatiom Systems

October 2001



Association of European Airlines

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Executive Summary

The Association of European Airlines (AEA) has engaged GPC and OXERA to investigate the computer reservation system (CRS) economic model and the European Union (EU) regulations that govern the relationships between airlines and CRSs. The objectives are:

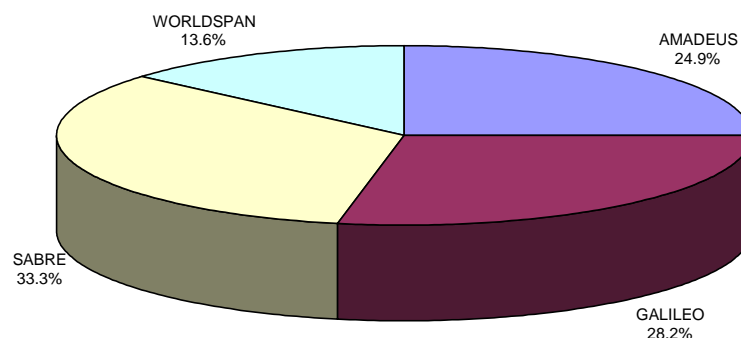
- to identify options that would change the working model between airlines, agents and CRS service providers to facilitate better competition across functionality, quality and price, by introducing increased market forces or more effective regulation;
- to influence the EU in the short term to address some of the ongoing concerns about non-compliance with the Code of Conduct and to improve the bargaining power of airlines with respect to CRSs.

CRSs are involved in the business of travel distribution—they act as intermediaries between suppliers of travel services (airlines, hotels and car-rental companies) and distributors of such services (travel agents, Internet travel agents). The central role is one of information transfer; data are stored about current service providers and the CRSs provide the necessary infrastructure to transfer these data, facilitating the distribution of travel products between producers and travel mediators.

The CRS industry is dominated by four major companies: Sabre, Amadeus, Worldspan and Galileo. These companies grew out of the internal reservation systems developed by airlines from the early 1950s in the USA. Sabre was the first CRS to be developed, by IBM and American Airlines in the 1950s. It became operational in 1963, and was made available to travel agents in 1976. Other airlines responded to these developments by commissioning computer companies to develop similar systems, and the other main CRS companies evolved as the existing technology was modified and enhanced. While Galileo and Amadeus were founded by European airlines, their origins still lie in the CRS systems developed in the USA. Far-reaching ownership changes have taken place over the last 10 years, with the flotation of Galileo and Sabre, but airlines remain majority holders in Amadeus and Worldspan.

The strength of the major four CRS companies can be seen in the worldwide market share that each company commands.

Global distribution system market shares, 2000 (millions of air segments)



Source: Garrett Communications (2001), '2001 GDS Yearbook'.

The Council of Ministers adopted the CRS Code of Conduct Regulation (hereafter referred to as the Code) on July 24th 1989, as part of the package on air transport liberalisation within the EU. The motivation for the Code was to promote fair competition in the airline sector (ie, competition *between* airlines for passengers). The EU wanted to ensure that large airlines did not use their ownership of CRSs to promote and protect their own interests, by preferential bookings on parent carrier flights, or by raising barriers to entry for market entrants. The Regulation was covered by a block exemption (3976/87, and later by 3652/93) (see section 2.2).

In 1993, the Code was modified to ensure equal functionality between participating carriers and to oblige parent carriers to provide information to all CRSs. In a major part this was intended to ensure that there was fair competition *between* CRSs and it was intended that equal access to flight and pricing information would benefit travel agents, air carriers and ultimately consumers. The block exemption expired on June 30th 1998.

The Code was changed again in 1999 to place a greater responsibility on subscribers (travel agents) with the introduction of Annex II. The Annex was introduced in order to ensure that subscribers would not provide ‘inaccurate, misleading or discriminatory’ reservation services. It was also intended to prevent travel agents making speculative or fictitious bookings in order to maximise the incentives offered by suppliers.¹ Finally, the Code was extended to cover rail bookings.

The Code remains embedded in Council Regulation 2299/89 (323/99 is the most recent amendment) and the Commission must formally propose any changes for modification of the Code. Any modifications would almost certainly be adopted by the co-decision procedure, as a joint Regulation of the Council of Ministers and the European Parliament.

Against the industry and regulatory background laid out above, the aim is now to set these industry features within a standard competition law framework. By defining the market structure and more formally exploring the market power of the participants, a coherent analysis of the CRSs’ actions is possible. More importantly, the likely success of a given remedy can be assessed against whether it addresses the underlying market problem.

The role that the CRS plays as an intermediary between airlines and agents means that two markets are focused on:

- an upstream global market for the distribution of airline information and reservation services for air travel to travel agents and system users; and
- a downstream market for the provision of information, booking and ticketing services for air travel services to agents, with national scope.

¹ Speculative bookings occur when a travel agent reserves seat inventory in anticipation of travel clients’ demand. Fictitious bookings are those bookings initiated by a travel agent which are unrelated to any current or expected use by travel clients.

CRSs have significant market power over airlines because each controls a large proportion of travel agents in the downstream market. From the airlines' perspective, CRSs are not readily substitutable for one another, as each CRS controls access to an important share of passengers through its member travel agents. Additionally, there are significant barriers to entry into CRS supply, which means that new intermediaries are rare. It is argued that the conditions are not in place that would prevent any one CRS (and certainly the four taken together) behaving independently of their customer airlines. This independence is revealed by the fact that most airlines could not choose to cease to participate in any one of the four major CRSs, regardless of the contractual terms offered.²

In the downstream market, competition by CRSs for travel agency market share is observed, as would be expected. There appear to be two main components of a CRS's offer to an agency: the extent to which the CRS is tailored to the needs of the agent's main market; and the price of the service offered. However, the price element of that competition takes a perverse form. Whereas five years ago there were still a number of agencies paying CRSs for services, now most agencies seem to *receive* payments from CRSs, as well as receiving the booking services. This is because CRSs pass a proportion of the booking fee they receive from the airlines on to the agencies, when the agencies generate the booking. As a result CRSs compete for the business of travel agents by offering increasingly high 'cash-back' payments. However, these increased costs are effectively passed back to airlines in increased booking fees (which have been rising by around 5% per annum), so this form of competition is not effective in constraining CRSs' costs. For as long as the airlines are unable to exit from the upstream CRS market, they have no choice but to pay these higher booking fees.

In addition, and reinforcing the inability of airlines to exit from a particular CRS, some CRSs clearly have a very strong position in some national markets, which could be argued to yield a dominant position. This dominance could be due to an excellent service offering for the given market, built up from investment by the CRS over a number of years. Such dominance per se is not illegal.³ The CRSs that are smaller in each market do appear to compete for agency business. Agents that tender for their CRS business generate multiple participants which offer competitive bids. With evidence of this, it is difficult to argue that any individual CRS has the power to behave to an appreciable extent independently of its competitors and customers, since other CRSs appear to compete with them. Further detailed investigation of any particular national market may reveal that the generic picture of competitive tendering does not hold, in which case the incumbent may be shown to be dominant. In general, the conclusion is that any one CRS

² This is not referring to the constraints on parent carriers embodied in the Code. Here it is argued that even non-parent carriers could not defend a decision to leave a CRS on commercial grounds, because of the loss of business.

³ This assumes that the investment in the national services was not cross-subsidised by income from the airlines upstream.

is unlikely to be dominant in a downstream market; the goal is to harness these competitive forces to yield better outcomes for passengers and airlines.⁴

Thus, CRS distribution is a joint product that offers services to both airlines and travel agents. CRSs do not compete for airlines to subscribe to their systems, but appear to compete vigorously between themselves for travel agents' business. This peculiar structure of the markets in which the CRSs operate has led to the following.

- Significant increases in the booking fees charged to airlines by the CRSs—on average 5% per year over the past five years. Although the cause of these price increases is unclear, the annual report of one of the CRSs mentions that the price increases were necessary due to higher costs of productivity booking schemes for travel agents.
- The CRSs make relatively high profits.
- In the upstream market, the CRSs do not operate in a competitive environment, which may have led to inefficiencies in the CRSs.
- As the airlines provide the majority of CRS revenues, they effectively cover most of the CRS costs, and pay for most of the services provided by CRSs to travel agents, such as hardware and back-office software.
- The European and US markets for travel agents are largely saturated, which means that the vigorous competition among CRSs for travel agents is of no benefit to the airlines. It does not generate greater numbers of bookings, but results in better deals for the travel agents and therefore in higher fees per booking for the airlines.
- Travel agents are paid for each booking. This gives them an incentive to inflate the number of bookings they make—for example, with fictitious bookings or duplicating bookings made in one CRS in another CRS.
- CRSs may use the booking fees charged to the airlines to finance the cost of developing CRS services for other travel sectors, such as car rentals and hotels and more recently, e-business development (cross-subsidisation).

⁴ This does not preclude that CRSs may be found to be jointly dominant in any market, nor that particular actions on the part of an incumbent (for example, contractual terms that dissuade agents from switching) may be found to be anti-competitive. It could also be argued that the 'cash-back' schemes form an entry barrier into these downstream markets, since any new intermediary must give similar incentives to the agents.

- The high level of cash-backs offered by the CRSs to the travel agents may form a significant entry barrier for new firms attempting to offer competing services to the CRSs. It would be very difficult for a competitor to the CRSs to attract travel agents to use its system without offering the same rebates, or similar cash inducements. Given the overall costs of providing such inducements, any new entrant would need to use the same basic economic model as the existing CRSs.
- The productivity bookings have some characteristics similar to fidelity discounts. The volume discounts are structured to drive the marginal purchase towards the CRS, which limits effective competition from other sources (such as direct sales).
- Distribution costs are high due to relatively high CRS profits and possible inefficiencies in the CRSs. This reduces consumer welfare.

The problems with the current market dynamics, especially with respect to the upstream market, flow primarily from two sources: the market power of the CRS operators with respect to airlines; and the interaction between the upstream and downstream markets through the CRS operators. Thus, in economic terms, there are three types of remedy that could be used to address the problems identified in the upstream market:

- introduce changes in the upstream market that reduce or remove the market power of CRS systems with respect to airlines by enabling effective competition to operate between CRSs;
- introduce more effective regulation of CRS operators to directly counter their market power;
- introduce regulation that harnesses the competitive dynamic in the downstream market to counteract the market power in the upstream market.

In practice, the number of forms of remedy that could be pursued is limited. The three forms of remedy analysed in this report focus on:

- changing the Code of Conduct;
- monitoring the CRS cost base;
- altering the price arrangements to align incentives more closely.

Changing, or removing, the Code of Conduct is designed to make it easier for airlines to negotiate with the CRSs, and hence improve the balance of bargaining power between the two parties. The current obligations on airlines mean that parent carriers are faced with an imposed ‘all-or-nothing’ choice, inherently weakening their negotiating position with

each CRS.⁵ Relaxing the obligations on airlines to enable them to choose different levels of functionality, participation that differs across regions, or even the option to delist from a CRS if they do not like the terms they are being offered, may improve the commercial relationship between each airline and CRS.

However, altering the Code of Conduct so as to increase the freedom of carriers may not actually succeed in significantly altering the balance of power between airlines and CRSs. The CRSs may have strong individual market power over the airlines, as a result of their control of access to a significant proportion of the distribution chain. If so, changing or removing the Code to give airlines more potential freedom will not actually deliver significantly more freedom, and will not therefore alter the balance of power.

A second type of remedy is to encourage regulatory scrutiny of the CRS cost base. Regulation—in the sense of intervention by the application of rules on behaviour—would be used to redress directly the balance of power in the upstream market. The most extreme form would be full price regulation, with the regulator assessing the appropriate level of costs that should be borne by the airlines. Less intrusive options could include requiring CRSs to be more transparent about their costs. In all cases, the level of ongoing regulatory scrutiny of the industry is significant.

The third possible remedy would require the most significant change to industry practice. The key change would be that the bulk (if not all) of the charges for booking fees are paid to CRSs by *travel agents*, not airlines. In this remedy, the reservation fees are simply seen as another element in the cost of the inputs that a travel agent needs to deliver travel services. The travel agent procures these services directly, as with communications services, computing facilities, etc, and recovers the costs either directly from customers, or from the supplier of the service (eg, airlines or hotel operators), through a commission.

The key advantage from such a shift is the improved incentives. Agencies use the CRSs more efficiently as they bear the incidence of CRS costs. This has the potential to lower the number of speculative and fictitious bookings made. The current market structure, where travel agents strive to reach booking volume targets so that they can benefit from booking incentive arrangements, contains an in-built incentive to increase speculative and fictitious bookings.

Subscriber-based pricing also encourages travel agents to negotiate on price, as there is no direct cost pass-through. Travel agents would recover CRS costs from the airlines (or other travel-service suppliers) through the commission system. Airlines will pay travel agents a flat-fee commission per booking based on the average level of CRS charges. This provides an incentive for the travel agent to negotiate well with the CRS.

⁵ While only ‘parent’ carriers are obliged under the Code to offer the same level of functionality in all CRSs, contractual clauses effectively require ‘non-parent’ carriers to do the same (eg, Amadeus Participating Carrier Agreement, November 1999, Article 2 Clause 1).

If a travel agent negotiates successfully with its CRS provider, there is the opportunity to earn higher returns than its competitors by beating the average CRS charge ‘yardstick’ set by the airlines. This yardstick will be the portion of the overall commission that is intended to cover CRS costs. Similar yardstick incentive schemes are common in the regulation of the water sector and pharmaceutical reference pricing schemes.

The problems with introducing such a scheme include that it concentrates the sources of agency revenue into airlines’ hands, increasing control by airlines of the distribution chain. This may not be welcomed by agents. As a remedy, it will only be successful if there is significant competitive constraint exerted by agents on CRSs. If any discrimination exists against small agencies, this will become more transparent in the new system, again provoking negative comment by agents. It is possible that some services of value to airlines may be underprovided if agents are now the key customer of CRSs. Hence, airlines will still need to contract with CRSs to develop new functions within the CRSs. Such side contracts may unwind the benefits of subscriber-based pricing.

The present market structure has become blocked.. The CRSs have been able to shelter behind the Code of Conduct, refusing dialogue with the airlines, dismissing enquiries from the European Commission, and refusing to respect newly introduced provisions, such as those relating to group purchase of data, while at the same time building their businesses.

1. Introduction

The AEA has engaged GPC and OXERA to investigate the CRS economic model and the EU regulations that govern the relationships between airlines and CRSs. The objectives are:

- to identify options that would change the working model between airlines, agents and CRS service providers to facilitate better competition across functionality, quality and price, by introducing increased market forces or more effective regulation;
- to influence the EU in the short term to address some of the ongoing concerns about non-compliance with the Code and to improve the bargaining power of airlines with respect to CRSs.

This report shows that there are serious problems with the market structure, which result in perverse incentives. CRSs face no competitive constraints when dealing with airlines; CRSs do display competitive behaviour with regard to agents, but this competition focuses on increasing incentive payments, rather than delivering value-for-money services that benefit passengers. Two key remedies are proposed:

- enhance regulation to increase the scrutiny of the CRS cost base;
- impose subscriber-based pricing to harness the competitive elements of the agent–CRS relationship.

An action plan is outlined, explaining the first steps involved in turning the proposed remedies into politically feasible outcomes.

The report is structured as follows.

Section 2 begins with an overview of the sector under discussion, examining the main elements of the relationships between airlines and CRSs, and between CRSs and travel agencies. Section 3 then lays out the regulatory background and the history of the ongoing dispute between European airlines and the CRSs, and the involvement of the European regulator. Sections 4 and 5 describe the underlying economic behaviour in the existing system, explaining much of the observed undesirable elements as rational responses to the industry structure. The analysis uses a formal competition law framework to underpin the conclusions, which facilitates the later discussion of the options available for action.

Section 6 critically assesses the three proposed remedies:

- removing or altering the Code;
- increasing the scrutiny of cost (either through formal regulation, or increased transparency);
- mandating that travel agents must bear the costs of the booking fee.

The last two sections consider the political feasibility of the proposed remedies and outline a recommended plan of action to achieve each of the above goals.

The team endeavoured to interview the key players in every segment of the market, including CRSs and travel agents. Significant difficulties were encountered with gaining access, particularly to CRSs, and all parties were reticent in sharing commercially sensitive information, as would be expected. The document highlights where there is insufficient evidence to draw a definitive conclusion. In these cases, to take the analysis much further, powers of compulsion to reveal data would be required, and hence the recommendations include encouraging a competition authority to investigate the potentially problematic practices.

2. Market Characteristics

CRSs are involved in the business of travel distribution—they act as intermediaries between suppliers of travel services (airlines, hotels and car-rental companies) and distributors of such services (travel agents, Internet travel agents). The central role is one of information transfer, data are stored about current service providers and the CRSs provide the necessary infrastructure to transfer these data, facilitating the distribution of travel products between producers and travel mediators.

A CRS is a high-speed network which connects the system with the service providers (airlines, etc) on the one hand, and the travel agents on the other. CRSs obtain real-time information about flight schedules and seat availability from the internal systems of the air carriers⁶ and receive information on fares from ATPCo. ATPCo receives up-to-date information on fares several times a day from the air carriers—the list of fares includes both public and private fares (specific fares on which air carriers and travel agencies have agreed).

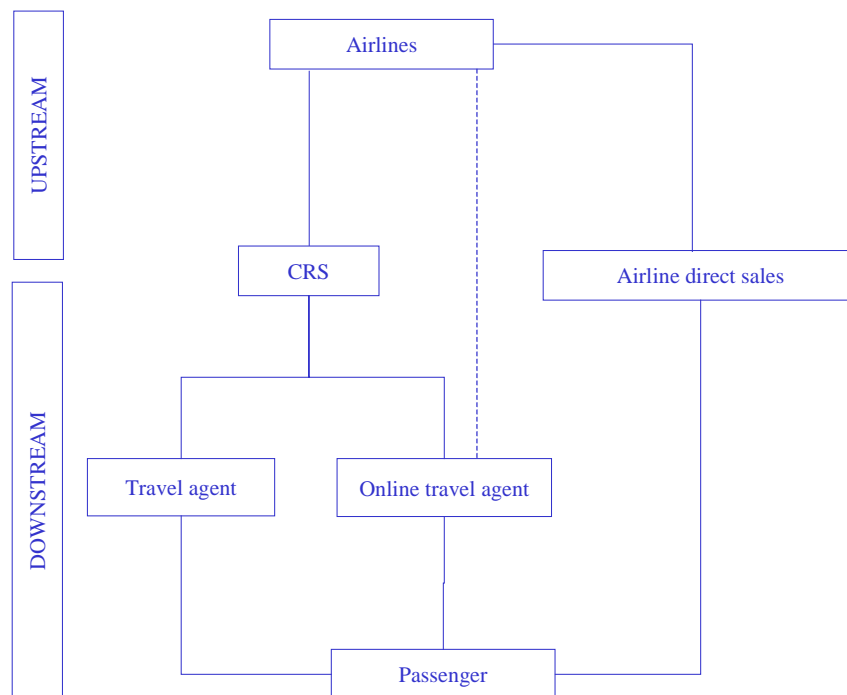
CRSs provide three basic functions: easy access to up-to-date and accurate information on flights and seat availability (search function); reservation (booking function); and fare quote and ticketing (ticketing function). Most CRSs also provide additional services, such as direct access to essential travel information and information about visa regulations and particular events. Furthermore, programs and interfaces have been developed which facilitate the internal administration for each travel agent. In addition, invoicing, accounting, customer and quota management are increasingly offered by CRSs.

2.1 Market structure—the upstream market

As Figure 2.1 illustrates, a CRS can be considered a distribution platform, which links airlines (upstream) and travel agents (downstream). In the upstream, or wholesale, market, the airlines provide the CRS with information on flight details, while the CRS offers airlines booking facilities and access to travel agents and travellers. Downstream, a retail market for the provision of air travel services exists. In this market, a CRS provides travel agencies with reservation, booking and ticketing services (and equipment, training and technical support).

⁶ Some airlines do not have their own internal reservation system. These airlines use a CRS for all their reservations.

Figure 2.1: Schematic representation of distribution of airline services

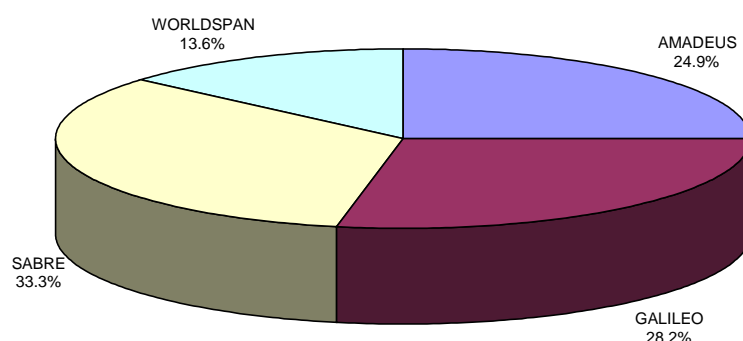


The CRS industry is dominated by four major companies: Sabre, Amadeus, Worldspan and Galileo. These grew out of the internal reservation systems developed by airlines from the early 1950s in the USA. Sabre was the first CRS to be developed, by IBM and American Airlines in the 1950s. It became operational in 1963, and was made available to travel agents in 1976. Other airlines responded to these developments by commissioning computer companies to develop similar systems, and the other main CRS companies evolved as the existing technology was modified and enhanced. Worldspan's roots lie in the IBM-based Programmed Airline Reservation System (PARS), initially developed in the 1960s before becoming the internal reservation system of TWA Airlines. While Galileo and Amadeus were founded by European airlines, their origins still lie in the CRS systems developed in the USA. Galileo developed out of the Apollo CRS initially introduced by United Airlines in 1971, while Amadeus was based on the software of the reservation system, System One, originally the CRS of Eastern Airlines.

Far-reaching changes have taken place over the last 10 years, with the flotation of Galileo and Sabre, but airlines remain majority holders in Amadeus and Worldspan. It is therefore instructive to look at the changing nature of CRS ownership over time.

The domination of the major four CRS companies can also be seen in the worldwide market share that each company commands.

**Figure 2.2: Global distribution system market shares, 2000
(millions of air segments)**



Source: Garrett Communications (2001), '2001 GDS Yearbook'.

There are also four regional CRS companies serving the far-eastern market: Abacus, Axess, Infini and Topas. A number of these are linked to one of the main CRS companies (see Table 2.1).

Table 2.1: Ownership of CRS companies in the Far East

Name	Area of operation	Ownership
Abacus	Asia/Pacific	Owned by Sabre and a consortium of Asian Airlines. Operates on Sabre platform
Axess	Japan	75% owned by Japan Airlines
Infini	Japan	Owned by Abacus and All Nippon Airways. Operates on Sabre platform
Topas	Korea	Joint venture between Amadeus and Korean Airlines

Source: OXERA, 2001.

While some airlines remain involved in the CRS companies, others have divested their stakes, and the CRSs have been floated on the equity markets. The most notable example of this occurred in 1997, when Sabre became partially publicly owned. This process was completed in 1999 when it was fully spun off from its parent carrier, American Airlines. Galileo International was also floated on the New York Stock Exchange in 1997, and on June 18th 2001 it was announced that Cendant Corporation would acquire the company for approximately \$2.9 billion.

Table 2.2: Ownership of CRS companies, 2001

Sabre	Galileo	Worldspan	Amadeus
100% publicly owned	74.4% publicly owned	40% Delta Airlines	30.08% publicly owned
	17.6% United Airlines	34% Northwest Airlines	23.36% Air France
	7.7% Swissair (sold in August 2001)	26% Trans World Airlines	18.28% Lufthansa Airlines
	1.5% five other airlines		18.28% Iberia Airlines

Source: Garrett Communications (2001), '2001 GDS Yearbook'.

The historical ownership of Amadeus and Galileo is reflected in the geographical spread of their revenue sources (see Table 2.3). While Sabre and Worldspan dominate the US

market, Amadeus takes the lion's share of European revenues. Galileo's revenues are the most evenly split among the CRSs.

Thus, it can be concluded that, far from being strictly a 'sub-industry' of the airlines, CRS companies are moving further toward self-sustaining, non-integrated organisations. Indeed, nearly 60% of travel agents now subscribe to CRS services controlled by the companies with broad public ownership.

Despite these ownership changes, there may remain a suspicion in the minds of regulators that parent carriers are likely to influence the CRS in which they hold equity in order to advance their operational interests, and hence that regulatory involvement to protect airline interests is unnecessary.

On the question of financial reward, parent carriers can easily show whether the incremental gains as shareholders outweigh the incremental costs as users of the systems. Non-parent carriers, which the Code of Conduct is designed to protect, are those that suffer most from the pricing system built into the current Code—they are subject to arbitrary fee increases, yet receive no shareholder benefits. In terms of allegations of bias, parent carriers in Europe would presumably accept that the non-discriminatory provisions of the Code of Conduct will continue to bind them, whether through a revised Code or by the application of competition policy. It is significant that the airlines themselves—including the parent carriers—object to the present market structure, although it may optimise profits for 'their' CRS. An airline shareholder will be as interested in the performance of the CRS as any other shareholder, but the European airlines concerned would argue that any benefits for the holding company from the present system are outweighed by the increasing costs of operations.

While airlines report that there is a clear arm's-length relationship between parent and CRS, which makes it difficult for an airline to exercise any influence, in the absence of formal ring-fencing, regulatory suspicions are likely to remain.

Table 2.3 presents the market shares (based on travel agency numbers) of the CRSs for broad regional markets. Each CRS is specialised in a particular region, with some very high individual market shares. Amadeus has a large market share in Europe; Galileo has a large market share in Canada, the Middle East and Africa; while Sabre is particularly strong in North, Central and South America and the Caribbean. Worldspan has a large market share in Mexico.

Table 2.3: Estimated worldwide travel agency locations of CRS vendors

	Amadeus (%)	Galileo (%)	Sabre (%)	Worldspan (%)	Total no. of travel agents
USA	12	27	40	21	45,374
Mexico	7	6	48	39	3,624
Canada	3	52	41	4	6,158
Caribbean and Latin America	45	11	43	1	14,929
Europe and Russia	52	22	15	11	63,076
Far East and Australia	15	17	67	1	38,898
Mid East and Africa	18	44	19	19	8,071

Note: This table overestimates market shares as it ignores other CRS and non-CRS travel agents.

Source: Garret Communication (2001), '2001 GDS Yearbook'.

Table 2.4 presents the market shares (based on travel agency numbers) of the different CRS vendors for the European market. Also within the European market, there is a high degree of specialisation. Amadeus has high market shares in Germany, France, Scandinavia and Spain, while Galileo has high market shares in the UK, Italy, Switzerland, Portugal and Ireland. Worldspan has a market share of 40% in Turkey. Sabre's market shares are relatively low—the highest is its share of 17% in the Belgian market.

The regional specialisation of the CRSs is due to historical reasons. For example, Amadeus was founded by a number of European airlines (among others Lufthansa, Air France and Iberia), based on the airlines' internal reservation systems. It was therefore attractive for European travel agents to subscribe to Amadeus, as it had very good access and understanding of the key European airlines. Sabre was in a similar position in the US market. Subsequently, CRSs have developed market-specific features through their national arms, in order to be more competitive in a particular national market. Different CRSs have focused their attention on different products and different areas. For example, in addition to air travel services, Amadeus and Sabre offer rail services in Germany and France, which give them a competitive advantage over Worldspan and Galileo in these areas.

Table 2.4: Estimated European-wide travel agency locations (%) of CRS vendors, 1995

	Amadeus	Galileo	Sabre	Worldspan	European share ¹
UK	7	73	15	5	16.7
Germany	82	10	5	3	15.5
France	80	7	8	5	14.4
Scandinavia	75	15	10		12.4
Italy	15	65	15	5	9.6
Spain	82	10	3	5	9.5
Switzerland	10	80	5	5	3.8
Netherlands	10	55	5	30	3.6
Greece	30	60	10		2.5
Turkey	20	40		40	2.5
Portugal	10	90			1.5
Ireland	10	82		8	1.5
Belgium	22	37	17	24	1.6
Other ²					4.9

Notes: ¹ The relative size of the national markets, expressed as a percentage of total scheduled air trips sold within each market.

Source: SH&E (1995), 'Study on CRS Charging Principles for the European Commission', July.

Flights can also be booked through other channels. Table 2.5 shows the proportion of sales of passenger-segment journeys sold through the various channels. The bulk of sales take place through CRSs. Only 22% of the tickets are sold over the telephone, airlines' own sales outlets or own Internet web sites (ie, channels that do not use CRSs).

Table 2.5: Upstream market concentration (%)

	Passenger-segment journey	Travel agents' locations
Amadeus	19.4	29.2
Galileo	22.0	22.9
Sabre	26.0	36.7
Worldspan	10.6	11.2
Others ¹	22.0	n.a.

Notes: ¹ The 'Others' category represents non-CRS sales and is extrapolated from 1995 figures. These older figures are likely to overestimate current non-CRS bookings—therefore the above are underestimates of CRS market shares. Travel agency proportions are overestimated, as they do not include non-automated agencies.

Source: Market shares of Amadeus, Galileo, Sabre and Worldspan: Garret Communications (2001), '2001 GDS Yearbook'; market shares of non-CRSs ('Others' category): SH&E Report (1995).

It can be concluded that most airline bookings are made through CRSs and that each CRS is specialised in a number of national markets. For example, Amadeus offers access to most of the travel agents (82%) in Germany, while Sabre gives access to 40% of the travel agents in the USA. Wherever a CRS is strong, it is the case that each CRS provides airlines with access to a large, discrete group of travel agents across the world.

2.2 Pricing structure in upstream market

The charging structures adopted by the CRSs are similar. Airlines are charged a booking fee whenever a reservation is made through that CRS system. The level of this fee depends on two factors: the country where the booking message originated,⁷ and the level of functionality in which the airlines participate.

CRSs offer different levels of functionality. As these levels increase, the CRS's ability to search schedules, check availability (eg, with seat maps), receive fare updates, etc, increases in sophistication. Levels of functionality can be viewed as a spectrum, with a basic booking request at one end, and full availability at the other. Generally speaking, the booking fee associated with the basic functionality is approximately half that associated with full functionality. Worldspan's 2001 pricing includes a \$1.88 booking fee for minimal service, and a \$3.26 fee for full service, while Sabre's prices ranged from \$1.98 to \$3.39 in the USA.

In addition to the above levels of functionality, airlines can choose to take optional services that can increase the booking fee still further. For example, Sabre's Carrier Specific Display product increases the full functionality fee by \$0.11 and allows a Sabre subscriber to request city-pair availability for a designated participating carrier. Sabre's Direct Connect service, which provides for instantaneous confirmation of seat assignments, is a further example of an optional service.

The final element of the typical CRS pricing structure is the cancellation fee, which is payable when a booking is made using a CRS and subsequently cancelled—in case of cancellation, the booking fee is refunded. Sabre's cancellation fee for 2001 ranges from \$0.11 to \$0.16 according to region.

The Code of Conduct demands that CRS pricing structures must be non-discriminatory, and charges are therefore the same for each participating carrier. As such, the airlines have no power (individually) to negotiate on price. While the Code in theory applies only to parent carriers, there is a 'parity provision' in all Participating Carrier Agreements, which requires *any* carrier active in a CRS to upgrade its participation in that CRS if it upgrades it in any other CRS for which it is a participating carrier. This effectively limits any carrier's ability to negotiate on price and service levels with any CRS.

2.3 The downstream market

The characteristics of the downstream market are very different from the upstream market. This section describes the services provided by the CRSs to the travel agents, the pricing structure, the level of switching and the various classes of travel agent.

⁷ Sabre's fees for a basic booking request, for example, are \$1.98 for a booking message originated in the USA, \$2.14 for a booking in Europe and \$2.41 for bookings in other regions.

As explained, CRSs provide various services to travel agents. The core product is the provision of a reservation system that allows the travel agent to investigate routings and seat availability with all the airlines supplying information to the CRS. In addition, the reservation system can provide a real-time booking engine (depending on the sophistication of the booking system of the airline in question), ticketing requirements, and information (and reservation capability) for a number of non-airline services, such as car hire or hotels.

Historically, CRSs have also provided travel agents with the hardware necessary to use their reservations systems. This was particularly important before desk-top computers were commonplace and cheap to purchase. CRSs would provide the terminals and connections that travel agents needed to access and interrogate the reservation system. These terminals and connections were CRS-specific, and a charge was made for them as part of the overall charge for the provision of CRS services.

The contracts were designed to take account of the fact that the agent was dependent on the CRS's hardware, allowing the CRS to gain a return on its investment, as well as remuneration for the provision of the reservation system. In addition, the CRS provided extensive training for staff members so that they understood how to use the CRS system that was characterised by abbreviated codes and symbols.

As technology has developed, travel agents have become less dependent on the CRSs for basic hardware, such as computers. It appears that, for a while during the late 1980s and early 1990s, the CRSs continued to offer hardware as well as the core service, but with fewer customers taking the full package.

The use of agents' own computers has also been facilitated by the shift from complex abbreviation and sign-based displays to those based on a graphical user interface (GUI). This is simpler to use, requires less training, and can generally be run from an ordinary desk-top computer using a software installation.

Accordingly, up to the mid-1990s, there had (in general) been a gradual reduction in agents' reliance on CRSs other than for reservation services. Recently, however, CRSs have expanded the range of services offered to travel agents to encompass the provision of networks and management information systems. They may also provide dedicated hardware (eg, ticket printers) to travel agents.

In order to provide the core reservation system service to travel agents, it is necessary for them to have a data link to the CRS computer server. For travel agents with more than one branch, the most efficient method of doing this is to have a single data feed into one of the agent's offices, and then connect all the offices to this main link. As a result, in order to provide the reservation system, the CRS creates a network running between all the agent's branches (if one did not previously exist).

Through these links, the CRSs offer network services as well as straightforward access to the reservation system to travel agents. Thus, smaller agency groups are supplied by the CRSs not only with their flight information, but also their communications infrastructure. It is not clear whether the larger agencies are also provided with such services, but the larger an agency chain, the more likely it is already to have an independent communications network between its branches. In such instances, a CRS would not duplicate the network, but branches would access the CRS through the single point of

connectivity, wherever that might be located, using the existing inter-branch links to reach it.

In some cases, CRSs have further integrated themselves into the operation of travel agents by providing management information, and, for some larger agents, full back- and mid-office systems. In this way, CRSs are heavily involved in the operation of their travel agent clients, and it is more difficult for the agents to switch between CRSs.

Therefore the level of involvement of CRSs in individual agencies varies considerably across the different types of agency. Summaries of the services provided to agencies by general grouping are provided below. This is meant as an indicative guide only, and would need further research with numerous travel agents to provide a more robust characterisation.

2.3.1 Segments of the travel agency sector

Although only limited discussions with travel agents have been possible at this stage, it appears that the travel agency market is segmented with respect to relationships with the CRSs. Below, the four key segments are discussed—full-service business travel agents, wholesale travel agents and consolidators, large leisure retail agents and small agents—focusing on the main elements of their arrangements with CRSs.

Full-service business travel agents

Only three full-service business travel agents have global reach: Hogg Robinson–BTI, Carlson Wagonlit and American Express Travel; consequently, they usually have global deals with the CRSs. In general, they will contract with several, if not all, of the major CRSs. The typical contract length is 3–5 years, and, at the stage of renewing the contract, the agent will obtain bids from all the CRSs.

Even the full-service agents normally only use one agent in a particular geographic region (normally at a country level, although the USA is more regionally based). The selection of the CRS that is used in each region is based on the regional strengths of the different CRSs. For example, in Germany the agents might use Amadeus, while in the UK it might be Galileo. However, these would be non-exclusive contracts in each region, and would not prohibit the agent from using a different CRSs if it had reason to do so—for instance, if a particular client wishes to use a specific CRS.

The strength of any particular CRS is often dependent on the additional services it can offer in a particular region, such as connections to local railway networks. It appears that, where a CRS has historically been the largest operator, it is also able to offer the broadest range of services to travel agents.

While full-service business agents are unlikely to need network services from the CRS, they may use the CRSs to provide back- and mid-office support, and management information systems. In such a situation, they would customise both their internal systems and those of the CRS, so that the two work seamlessly together.

The business agents may not have their own proprietary displays on their user terminals, but the CRSs are increasingly similar, so that only limited retraining may be necessary if the agent changed its CRS.

Wholesale travel agents and consolidators

The large wholesale travel agents and consolidators (for example, Trailfinders and e-bookers) are the most demanding with regard to CRS services, and correspondingly the most likely to switch between CRSs.

In general, the consolidators operate from a very limited number of large offices, thereby reducing the connectivity problems between them, and have developed their own proprietary front-end systems. They only use the CRSs for their core functionality—the reservation system.

If they were to change CRS, this would occur as a change in the input to their system, but the terminal operator would not notice, and probably not even be aware of, any difference (assuming the same level of functionality between the old and new CRS). The main problems with switching CRS are the interconnection between the new CRS and the in-house system, and the migration of bookings (discussed in greater detail below).

As consolidators have a considerable level of demand, and it is relatively straightforward for them to change CRS, they are able to obtain good terms in the market. There is also clear evidence that they will switch between CRSs if necessary, with one consolidator changing CRS five times in three years.⁸

Large leisure retail travel agents

These are the large retail chains that mainly focus on package holidays, but also sell scheduled flights when requested by customers. It is not clear at present to what extent large retail travel agents use CRS services.

It is likely, however, that such agents do not use the CRSs' network services, nor, possibly, their back- and mid-office solutions. These functions are already likely to be in place to support the package-tour sales operation that accounts for the majority of large leisure retail agents' business.

Small business and leisure travel agents

Regardless of whether they deal with leisure or business travel, it is likely that small travel agents have similar requirements and usage of the CRSs. Such agents are less likely to have an existing network, and so will use the network service packages provided by their CRS. However, due to their small scale, they are unlikely to need sophisticated support services or management information systems.

Small travel agents will therefore use the core reservation systems provided by the CRSs, and will take the opportunity to have a communications network included in the package. They may also require more hardware than the other types of travel agent.

⁸ Information provided to the team during an interview.

2.3.2 Pricing structure in downstream market

Prices between the CRS and travel agents are determined through individual negotiation, although the overall structure of the charges appears largely the same across agents.

Prices are set on either a net or gross basis. The net fee adjusts the per-booking payment from the CRS for the unit charge for hardware and other CRS services (eg, network provision) used by the agency. This unit charge is estimated from the total price for the additional services and the expected number of bookings. The gross fee is effectively an unbundled version of the net basis. The per-booking fee is not adjusted, and the agency is charged separately for the other services, which gives the agency more control over its costs, and allows transparency of the charging regime. The risks differ across the two methods, with a benefit from the gross arrangement if booking numbers exceed expectations.⁹

If an agency uses the unbundled pricing basis, it is more certain of paying the CRS appropriate charges for the hardware, software and other peripheral elements it chooses to accept from the CRS. However, it is not clear at present whether the fee levels available on the gross booking fee basis are equivalent to the net booking fee charges, nor whether the same incentive structures (see below) are used.

It is also not clear whether all agents are offered the choice of net or gross fees, or even whether all CRSs offer these fee bases.

The reason the CRS can afford to pay the agent (rather than the agent paying the CRS for receiving a service, as is found in more conventional markets) is that the agent effectively creates revenue for the CRS. By booking through a particular CRS, the agent allows the CRS to charge the airline its booking fee, which will be higher than the agreed payment to the travel agent.

As the booking fee paid by the airline is a flat-unit rate, regardless of the number or type of bookings the agent executes, the CRS has an incentive to increase the aggregate number of bookings that are transacted through its system. Accordingly, CRSs compete with each other to maximise the number of bookings through their own system. This has resulted in interesting incentive arrangements, known as ‘productivity payments’, or ‘cash-back’, from the CRS to the agent.

These incentive payments are basically loyalty bonuses. When the contracts are negotiated, the agent specifies its expected number of bookings in the relevant time period (usually on an annual basis), and the CRS quotes a booking rebate on the basis of this figure. The CRS will offer larger per-booking rebates to the agent, the greater the

⁹ For example, consider that an agent with 400,000 expected bookings per year has the option of a net fee of £1 per booking, a gross fee of £2 per booking, with annual fixed charges of £450,000. If bookings are in line with expectations, the net booking fee provides a better return. If, however, actual bookings are 500,000, the agent receives £500,000 on the net fee basis, but £550,000 from the gross fee.

number of bookings that it commits to put through that CRS. The CRS may use the opportunity of higher per-booking rebates to encourage the agent to commit to produce very high levels of bookings in any one year.

Most of the CRSs agree a flat per-booking rebate that applies to all bookings by the agent, but with penalty elements if the agreed total is not reached. The agent is charged for the shortfall in the number of bookings below the target, and this per-booking charge generally exceeds the value of the rebate from the CRS. For example, OXERA found evidence of a CRS tariff that offered a £1 rebate per booking, with a penalty charge of £1.50 per booking below the target.

As a result of the incentive structures used, most travel agents use only one CRS in any geographic region. If an agent contracted with more than one CRS, the volume spread across each CRS would be reduced, and the per-booking fee payments would be smaller. The exceptions to this rule are mainly due to legacy systems post-consolidation. Another exception is the larger business travel agents, which may contract with all the CRSs so that they can satisfy large corporate clients with a preference of one CRS over another. None the less, these agents often have a preferred CRS through which they transact the majority of their business.

2.3.3 Contract length

The Code of Conduct restricts the contract length for CRS services to a maximum of one year with termination penalties, and thereafter both parties to the contract must be able to withdraw at three months' notice.

However the Code does not make any reference to hardware or peripheral services provided by the CRSs. The contracts for these are separate from the main CRS contracts, and are considerably longer, possibly with termination penalties. For example, hardware contracts (printers, terminals) may be for between 3 and 5 years. In addition, there will be termination charges to compensate the CRS for a loss of return on its hardware investment.

These terms are often found in equipment-lease contracts, where one party to the contract makes an investment in order to provide the services or equipment to the other party (in this case, the CRS bears the hardware investment). However, the impact on the CRS–travel agency market is that it effectively (although not explicitly) increases the length of the CRS reservation system contract.

In other words, although the agent is free to terminate the reservation service contract while maintaining the hardware contract, in practice this is difficult, and involves managing two contracts rather than one. It is also not clear whether there is pressure from CRSs to retain a link between the two types of contract (this could be an anti-competitive tying practice, for which there is currently no evidence).

Therefore, the effect of CRSs offering a broader range of services to travel agents that are contracted for a period of more than one year is also to extend the effective length of the contracts for reservation systems.

2.3.4 Travel agent switching between CRSs

The level of switching by travel agents between CRSs is unclear. It appears to vary between the different types of agency. As noted above, the wholesale and consolidator

agencies appear to be the most likely to switch CRS, and have structured their internal systems precisely in order to do so. For other agencies, however, switching appears to be less easy.

Smaller agencies appear to have particular problems in switching. If they take a considerable amount of non-reservation system services, such as communications network provision, they become heavily dependent on the CRS. Changing the CRS could involve considerable upheaval in the business, and would not be undertaken lightly. Furthermore, small agents with lower trading volumes are less likely to be offered deals that are as good as those offered to the larger agents, or even provided with the inducements to switch that are given to the high-volume firms.

One of the main potential problems of switching CRSs in terms of bookings is control over existing bookings. The migration of the current database to a new CRS can be difficult, and a time-consuming process. The CRS is likely to be the main source of information for the travel agent about their outstanding bookings, and traveller data. If this information were lost in the migration from one CRS to another, it would be extremely difficult to recover, and customers may not receive their tickets or flight confirmations.

Steps must be taken by the agent to mitigate the migration problem. Often, this will involve making hard copies of the database of bookings, and passenger details. The degree to which the CRSs will facilitate the migration process is unclear, and reports conflict between different agents. It may be that the level of involvement, particularly from the new CRS, is dependent on the importance of the individual client, and the greater the expected volume of business, the more effort the CRS will make in helping the migration process.

While there is clear competition between the CRSs for agency business, there appears to be a significant incumbent advantage, indicating that the existing CRS is likely to retain the business. The reluctance of agents to switch is increased by greater costs of switching, such as may arise from longer hardware contracts, with termination charges, and problems with migration.

It should also be noted that, in spite of the fact that, for some travel agents, switching is relatively easy, the level of actual switching is probably low. This is because the incumbent CRS will often match or beat the 'cash-back' schemes offered to its travel agents by one of the other CRSs, thereby removing the travel agent's incentive to switch.

3. Background/History

3.1 General background to the Code of Conduct

The Council adopted the Code of Conduct Regulation on July 24th 1989, as part of the package on air transport liberalisation within the EU. The motivation for the Code was to promote fair competition in the airline sector (ie, competition *between* airlines for passengers). The EU wanted to ensure that large airlines did not use their ownership of CRSs to promote and protect their own interests, by preferential bookings on parent carrier flights, or by raising barriers to entry for market entrants. The Regulation was covered by a block exemption (3976/87, and later by 3652/93) (see section 3.2).

In 1993, the Code was modified to ensure equal functionality between participating carriers and to oblige parent carriers to provide information to all CRSs. In a major part this was intended to ensure that there was fair competition *between CRSs* and it was intended that equal access to flight and pricing information would benefit travel agents, air carriers and, ultimately, consumers. The block exemption expired on June 30th 1998.

The Code was changed again in 1999 to place a greater responsibility on subscribers (travel agents), with the introduction of Annex II. The Annex was introduced in order to ensure that subscribers would not provide ‘inaccurate, misleading or discriminatory’ reservation services. It was also intended to prevent travel agents making speculative or fictitious bookings in order to maximise the incentives offered by suppliers. Finally, the Code was extended to cover rail bookings.

3.2 Legal position

The Code remains embedded in Council Regulation 2299/89 (323/99 is the most recent amendment) and the Commission must formally propose any changes for modification of the Code. Any modifications would almost certainly be adopted by the co-decision procedure, as a joint Regulation of the Council of Ministers and the European Parliament.

The Commission’s 1997 report and proposal for amending the Regulation (COM(97) 246 final) called for a review by the end of 2002. However, this provision was not incorporated in the final text as adopted by the Council, and is therefore missing in the final legislation; no reviews are currently scheduled.

Furthermore, the block exemption granted under the original Regulation has lapsed, meaning that Article 81, paragraph 1 is now directly applicable to the common purchase, development and operation of CRSs. In other words, CRSs are liable to the full scope of competition rules and cannot prevent, restrict or distort competition by:

- (a) Fixing purchase or selling prices;
- (b) Limiting or controlling production, markets, technical development or investment;
- (c) Sharing markets or sources of supply; or
- (d) Applying dissimilar conditions to equivalent transactions with other trading parties, placing them at a competitive disadvantage
— unless there are deemed to be compensating benefits.

One aspect of the Code has been challenged in the European Court. In December 2000, the Court of First Instance ruled on the Galileo/Amadeus complaint against Article 6.1b part v—data processing for a common enterprise (case number T-113/99). The Court

heard testimony from the CRSs that they represent a ‘closed category, distinct from any other company which might in the future run a global CRS within the Community’. Furthermore, the CRSs claimed that they represent a ‘restricted circle of operators targeted by the contested (Code) provisions’. As such, they complained that the Code had a direct effect on their business and stressed the existence of barriers to entry as proof of their unique nature.

The Court of First Instance rejected the CRS argument that the provisions were unacceptable because they targeted specific parties. However, it is none the less significant that the CRSs should have seen themselves as a closed circle in this way.

3.4 Exchange of letters with the Commission

The airlines’ concerns about the operation of the Code since the 1999 amendments have been expressed in a series of letters to DG TREN. The most significant of these is from the AEA to Michel Ayrat, DG TREN’s Director of Air Transport, dated March 15th 2001.

This letter suggests that there has been collusion between the CRSs on the timing and procedure for price changes, and that the increases are ‘neither reasonably related to costs for services offered and used by the airlines nor are they plausible regarding the actual development costs for computer operations’. The letter also claims that ‘the airlines earlier had tried to challenge or to negotiate those increases and were threatened by the CRSs to be cut off the system.’

Sørensen replied on behalf of Mr Ayrat on April 10th 2001. Among the key points in the Commission reply are the following:

- the Commission is happy to investigate the complaint, but requires further information;
- if problems are arising which can only be resolved by changing the Regulation ‘then such improvements must certainly be considered and appropriate legislation proposed if necessary’;
- a significant number of carriers firmly remain parent carriers, with ‘a serious financial interest in ensuring that CRSs are as profitable as possible’;
- there will be little scope for relaxation of the basic principles as long as there are parent carriers;
- a revolution in technology since the drafting of the Code will offer new possibilities for airlines to bypass CRSs.

This exchange of letters was the culmination of a flow of correspondence which included the problem of fictitious booking and the CRSs’ refusal to recognise the entitlement of ‘group’ applicants to collective purchase of Marketing Information Data, as set out in the 1999 amendment.

3.5 The US regulatory regime

A major difference in policy approach towards CRSs between the USA and the EU is apparent. In the USA, CRS regulation is centred on airline ownership issues. While some CRSs (Sabre) no longer have any links to airlines, it appears that US policymakers will continue to apply the CRS regulation. Within the EU, however, CRS regulation has a

basis in functionality, so that every product relating in any way to air transportation is covered by the Code.

The US rules were reviewed in 1997 to take account of parity provision, so that levels of airline participation may differ across CRSs. On reviewing CRS legislation, the US Department of Justice (DoJ) noted that:

unless a carrier is willing to forego access to ... travel agents, it must participate in every CRS' and observed 'more than three-quarters of CRS revenue is earned from airlines which see little price competition among the CRSs while approximately ten percent comes from travel agents which see intense price competition.'¹⁰

Following a letter from the Chair of the Senate Commerce Committee (Ernest Hollings, D-SC) to the Secretary of Transportation, Norman Mineta, the Department of Transportation is currently reviewing CRS legislation to produce a revised set of rules. While no official deadline for the revised legislation is in place, it is understood that a new set of rules could be discussed by the end of 2001. Officials within the Department of Transportation stress that, while the EU has asked for US rules to become more similar to its own, it appears that there are no specific plans to do so.

Senate sources say that the new rules are likely to focus on the issue of Internet alternatives to CRSs, fidelity payments and the impact of e-commerce on the market, rather than on the structure of pricing. Just as with EU policymakers, there appears to be a strongly held belief that the Internet will provide a good source of competition for the CRS market. However, the most fundamental issue for US policymakers remains the belief that there is still no clear distinction between the airlines and CRSs. As such, it appears unlikely that there will be a significant reshaping of the current regulatory framework.

The exception to the US CRS system is shown by Southwest Airlines, which participates only to a limited level in Sabre. Because the airline operates on a point-to-point system—rather than a hub-and-spoke approach (ie, there is no reliance on connecting flights)—and operates in dense markets, it has been able to build strong name recognition and rely on direct sales rather than participating in normal CRS services. At present, for example, it is estimated that the Southwest Airlines' web site accounts for 35–40% of total sales. However, it should also be noted that the Southwest formula is an extension of its unique business organisation, and as such is not suited to most airlines.

3.6 Cendant–Galileo

In a recent development, the US service company, Cendant, received EU and US regulatory clearance for its acquisition of Galileo International following an agreed offer. Cendant also owns Avis and several hotel chains, which gave rise to concerns that the

¹⁰ Comments of the US Department of Justice to the US Department of Transportation, September 19 1996. Docket OST-96-1145

deal could allow Cendant to introduce ‘screen-based bias’, where Cendant’s businesses would gain an advantage over others. The Commission considered this issue, but determined that CRSs are a minority supply route for car rental (the main potential problem area), and therefore no further action was necessary.

The airlines expressed concern about potential cross-subsidy of non-airline product developments by airline booking fees. This means that airline fees may be used as the source of funds to support other aspects of their business (such as rail, car and hotel reservations). However, the Commission did not consider this to be a significant complaint and no action was taken.

Nonetheless, these developments further suggest that the Code with its detailed rules constraining only airline behaviour is no longer appropriate to the marketplace that is evolving.

3.7 Relationship between airlines and CRSs—chief complaints

As the patterns of CRS ownership and control have changed over the past decade, so, too, has the relationship between airlines and CRS organisations. Indeed, in many ways, relations between the two groups have become more strained with changing market dynamics—the clear result of an industry that is operating under an outmoded regulatory structure.

Currently, the chief complaints against CRSs by the airlines are:

- *level of fees*—fees to carriers are increased on a regular basis, despite the fact the computer-processing costs have generally declined over the last ten years;
- *a lack of transparency in fee fixing*—there is no system in place to verify that CRS fees are indeed based on cost, and the CRS organisations themselves have consistently refused to share this information voluntarily;
- *CRS refusal to negotiate or explain behaviour*—in general, there is a lack of willingness on behalf of the CRS companies to address serious airline concerns in a forthright manner. This has been the experience of the AEA;
- *refusal to acknowledge same-day cancellations* in the net figure charged to airlines. Some CRSs insist on charging a fee for same-day cancellations, although the Code provides that cancellations should not be chargeable. Cancellations on day of departure account for 4–9% of booking volume, depending on the airline;
- *travel agent discipline*—there is insufficient CRS monitoring of travel agents as regards duplicate booking, overbooking and other activities disallowed under the Code;
- *active/passive booking practices*—this is particularly a problem in Germany, where two CRSs may be involved in a single booking, generating double charges for the airline;
- *group provision for data purchasing has not been applied*—the possibility for ‘a group of airlines and/or subscribers’ to purchase data for common processing has never been accepted by any of the CRSs; and
- *airline fees cover travel agent incentives*, which the airlines see as a marketing cost, rather than an operational cost, and therefore should not be charged back under the Code.

The European Commission has referred some of these points to the CRSs. The responses have been:

- some changes in the charging system are not price increases but restructuring measures that are revenue-neutral to the CRSs;
- changes have been made to ensure that only *ticketed* passive bookings are charged to the airlines;
- CRSs are entitled to recover their costs through increased fees and EU rules do not ‘determine or limit the number of price changes a CRS can have’; and
- net booking charges cover many other services provided to the airlines distinct from actual reservations.

The AEA and associated airlines have made several attempts to bring these concerns—and the systemic issues underlying them—to the Commission’s attention. Despite these efforts, there are no plans at present either to conduct a full review of the CRS Code, or to introduce other measures to rebalance the system appropriately.

4. Defining the Markets and Assessing Market Power

Against the industry and regulatory background laid out in sections 2 and 3, the aim is now to set these industry features within a standard competition law framework. By defining the market structure and more formally exploring the market power of the participants, a coherent analysis of the CRSs' actions is possible. More importantly, the likely success of a given remedy can be assessed against whether it addresses the underlying market problem.

The market under analysis is complex. The underlying driver of the market is the service being supplied to passengers by air travel suppliers—CRSs and travel agents are both intermediaries in this exchange. In many markets, intermediaries are considered to be eminently substitutable, and hence draw little attention from competition authorities. However, the nature of the intermediary CRS does lead to concerns about the competitiveness of the market. From the airlines' perspective, CRSs are not readily substitutable for one another, as each CRS controls access to an important share of passengers through its member travel agents. Additionally, there are significant barriers to entry into CRS supply, which means that new intermediaries are rare. Thus it is important to focus on the relationship of the intermediary CRS in its encounters with airlines and agents.

This role that the CRS plays between airlines and agents means that two markets are focused on:

- an *upstream market* for the distribution of airline information and reservation services for air travel to travel agents and system users; and
- a *downstream market* for the provision of information, booking and ticketing services for air travel services to agents.

These markets are discussed in full in section 4.1.

Having defined the two markets, the next stage is to consider the power of the CRSs within these markets. It is a crucial element of this to recognise the interdependency of the two, as reflected in the fact that CRSs are intermediaries.

CRSs have significant market power over airlines because each controls a large proportion of travel agents in the downstream market. It is argued that the conditions are not in place that would prevent any one CRS (and certainly the four taken together) behaving independently of its customer airlines. This independence is revealed by the fact that most airlines could not choose to cease to participate in any one of the four major CRSs, regardless of the contractual terms offered.¹¹

¹¹ This is not referring to the constraints on parent carriers embodied in the Code. Here it is argued that even non-parent carriers could not defend a decision to leave a CRS on commercial grounds, because of the loss of business.

In general, many intermediaries appear to control access to customers in this way, but do not cause serious competition concerns. In other industries, suppliers can generally vary the prices they charge by delivery channel, to influence end-customer behaviour. Giving end-customers an incentive to pick one channel over another then gives the supplier influence over the channel itself. Airlines are legally constrained in their ability directly to influence travel agents' choice of CRS, or to use indirect methods, such as offering different fares to different CRSs, through the Code and other regulatory rules. Hence they have no lever by which to affect any given travel agent's choice of reservation system.

In the downstream market, competition by CRSs for travel agency market share is observed, as would be expected. There appear to be two main components of a CRS's offer to an agency—the extent to which the CRS is tailored to the needs of the agent's main market, and the price of the service offered. However, the price element of that competition takes a perverse form. Whereas five years ago there were still a number of agencies paying CRSs for services, now most agencies seem to *receive* payments from CRSs, as well as receiving the booking services. This is because CRSs pass a proportion of the booking fee they receive from the airlines on to the agencies when the agencies generate the booking. As a result CRSs compete for the business of travel agents by offering increasingly high 'cash-back' payments. However, these increased costs are effectively passed back to airlines in increased booking fees (which have been rising by around 5% per annum), so this form of competition is not effective in constraining CRSs' costs. For as long as the airlines are unable to exit the upstream CRS market, they have no choice but to pay these higher booking fees.

In addition, and reinforcing the inability of airlines to exit from a particular CRS, it could also be argued that some CRSs have a dominant position downstream in a given national market. This dominance could be due to an excellent service offering for the given market, built up from investment by the CRS over a number of years. Such dominance per se is not illegal.¹² It could be argued that the 'cash-back' schemes form an entry barrier into these downstream markets, since any new intermediary must give similar incentives to the agents. This may strengthen the position of any incumbent player. These arguments are explored in full in section 4.2.

4.1 Definition of the market

When assessing market power, a restrictive agreement or possibly abusive conduct under the competition law, competition authorities generally have to define the 'relevant market' in which the merger, agreement or conduct takes place. Defining the relevant market is not an end in itself, but rather a very important, intermediate step in evaluating the competitive constraints faced by the company or companies subject to the investigation.

¹² This assumes that the investment in the national services was not cross-subsidised by income from the airlines upstream.

Usually a distinction is made between two types of competitive constraints that could prevent a supplier of a certain product in a certain geographic area from increasing its price:¹³

- *demand-side substitution*—customers may switch to other available products or to other geographic areas; and
- *supply-side substitution*—companies already supplying similar products (or neighbouring geographic areas) may readily switch to supplying the product (or area) of the company in question.

The following sub-sections demonstrate that there are two distinct markets involving CRSs:

- a wholesale market for the distribution of information and reservation services for air travel through CRSs and other booking methods, which is global in scope; and
- a retail market for the provision of air travel services (including information, booking and ticketing) to travel agents through CRSs and other booking methods, which is national in scope.

These could be argued to be conservative definitions of the markets at issue—in particular by including all other booking methods—and would therefore understate the degree of market power currently enjoyed by the CRSs.

The geographic elements of the defined markets match the internal corporate structures of CRSs. All arrangements with airlines are coordinated on a global level, while dealings with agents are delegated to national marketing bodies. This latter structure allows CRSs to respond to the different needs of national travellers.

4.1.1 Defining the upstream market

In the upstream market, airlines need to disseminate information on scheduled airline flights, and give access to passengers for booking these services. Travel agents are the key link in this chain between passengers and airlines, although most airlines also have direct sales. From an airline perspective, the important issue is access to consumers who purchase scheduled air tickets, whether this is through a travel agent or a direct transaction with the consumer. The CRSs are a crucial input into the travel agents' business of supplying travel advice and sales to consumers, and the service that CRSs (through travel agents) are providing for the airlines is this access to consumers.

The methods for delivering information about scheduled airfares to consumers can be separated between CRS services and other sales routes, such as direct sales or Internet sales. These information distribution and sales routes have different characteristics, and

¹³ A third constraint, that of completely new entry, is considered when assessing market power in the defined market.

offer alternative methods of supplying consumers with the same service. The question is whether all of these providers should be seen as part of the same market.

The answer to this question may differ, depending on whether the time frame being considered is the short run, or whether longer-run bypass options are included.

Potential short-run substitution away from any CRS

The degree to which an airline can substitute away from any of the CRSs is very limited in the short run. This conclusion depends crucially on the characteristics of the downstream market. Individual CRSs are not substitutable for as long as each one provides exclusive access to a number of travel agents and, through them, exclusive access to particular (potential) passengers. If travel agents changed CRSs readily, and in response to the inclusion or absence of a particular airline in the database, or potential passengers switched travel agents on the basis of the characteristics (ie, whether or not a particular airline was included in the data base) of the CRS used by the travel agent, different CRSs would be substitutes for airlines. However, if the downstream switching does not take place (and quickly) then, from the airline's perspective, the CRSs are not substitutes for each other and each CRS would be in a separate market.

Thus it is necessary to understand the extent to which travel agents consider CRSs substitutes, the number of CRSs to which travel agents subscribe simultaneously, and whether agents can easily switch from one CRS to another. For example, if most travel agents used more than one CRS simultaneously, and could switch between CRSs with ease, airlines would have a choice over which CRS they used to access any particular agent.

It appears, as described in section 2, that most travel agents use only one CRS at any one time, a phenomenon facilitated by the incentive payment structure.¹⁴ The main exception to this rule is the large business travel operators, but even they usually have one preferred CRS in any given country.¹⁵ This means that if an airline discontinues its participation in one of the CRSs then, at least in the short term, it risks losing the business of all the travel agents supplied by that particular CRS.

The proportion of agents to which access would be lost in the medium term as a result of withdrawing from one CRS will depend on the ability of travel agents to switch to the other CRSs (assuming the airline participates in the other CRSs). If switching in the downstream market were relative easy, and travel agents were motivated to switch on the basis of the airline membership of a CRS, then this would give airlines more leverage over CRSs in the upstream market, and would suggest that the CRSs are substitutes.

¹⁴ Data provided by British Airways indicates that only 1% of the UK travel agents that book flights with British Airways use more than one CRS.

¹⁵ The USA may be the exception to this.

As explained in section 2, the possibility of switching even in the medium term may vary for the different types of travel agency. Certain classes of travel agencies and passengers can switch, while others are more constrained. The switchers consists of large companies, consolidators, tour operators and large business travel agencies. Small and medium-sized travel agencies often use network, hardware and software provided by the CRS, which makes it more difficult to switch.

Furthermore, although, to a large extent, the CRSs all offer a similar level of service, there are differences that may affect travel agents' willingness to switch between CRSs. In a number of national markets, some CRSs have a competitive advantage over others. For example, Amadeus and Sabre provide travel agents in Germany and France with national rail services that are considered essential services from a CRS. This explains to some extent why travel agents in these countries do not easily switch to Galileo or Worldspan unless they are adequately compensated.

Finally, even if travel agents quickly switched CRS as a result of an individual airline exiting the data base, this may not give airlines as a class much more power in the upstream market. This is because, if different airlines exited different CRSs, the pressures on travel agents to switch CRS would tend to cancel out. Thus, even if switching were easy, airlines would still face pressures to join all CRSs.

At present the level of switching seems to be relatively low, with the exception of the large consolidators. However, it is not clear whether this is due to an actual differentiation between the CRSs that means that they are not substitutes, or merely an incumbent advantage in retaining agents at the renegotiation stage. In particular, the incentive schemes may distort the true assessment of substitutability. Even so, the rate at which the incentive payments have escalated in recent years suggests that there is some competition between CRSs, and that switching is feasible.

In the short term, it is likely that airlines have no option but to participate in all CRSs. The current market suggests that CRSs provide access to a fixed block of travel agents that are unlikely to be influenced to change CRS by the action of an airline. Hence, it could be concluded that, in the upstream market, each CRS forms a separate market, from the perspective of a major carrier.

Options for bypass of CRS with other booking methods (direct sales and Internet)

In the medium term, other booking methods, such as direct sales and Internet-based travel agents, may be considered substitutes for CRSs. Currently, OXERA is not aware of any Internet site that has direct contacts with airlines, but still provides the same route and fare comparison provided by a CRS-based site. However, as these services develop, they may undermine the position of the existing CRSs. This depends predominantly on whether travel agents consider these other booking methods substitutes for a CRS-based service, and whether consumers consider them to be a substitute to travel agency services.

Internet travel web sites are one suggested bypass route for disintermediation. As far as passenger choices are concerned, customers may go directly to their favourite supplier for a repeat journey about which they are already fairly well informed. Where the routing is straightforward, and price is the principal concern, direct sales are also a popular booking method. For example, airlines offering cheap tickets, such as EasyJet and Buzz, do not participate in any CRSs and their flights are not sold through travel agents.

Similarly, for routes with a limited number of carriers, especially domestic flights, passengers may also avoid using travel agents. In both the USA and Europe, the number of direct sales is particularly high for domestic flights.

At present the services that actually bypass a CRS are limited, and mainly constitute airline direct sales. In 1995, around 20% of bookings were direct sales and this approximate proportion is confirmed by some individual carriers.¹⁶ The remaining 80% are through travel agents, predominantly through the four major CRSs.

As the complexity, or unusualness, of the routing increases, the probability of using a travel agent (and hence a CRS) increases, as it is a very efficient means of comparing options. This would imply that the 20% of journeys that are already avoiding CRSs form a separate market because they comprise journeys that do not require the passenger or agent to search widely for options.

Alternatively, this 20% could act as a constraint on CRSs, indicating a longer-run scenario in which passengers substitute away from CRSs to new, disintermediated, direct options.

Geographic scope

The geographic scope of the wholesale market is global. On the demand side, this is because the Code prevents an airline from only using a CRS for a restricted regional area—if an airline participates in a CRS, its flights can be booked by all the travel agents in the world subscribing to that particular CRS. On the supply side, because the market is predominantly about the supply of information, once a CRS has the information, it can supply this to all its travel agencies at limited additional cost. One of the key additional costs will be the physical infrastructure linking a new region to the CRS. This is unlikely to be a costly exercise in most parts of the world. Hence, the supply-side characteristics are also suggestive of a global market at this wholesale level.

Conclusion

In the short run, it appears that major airlines have little choice but to participate in all four CRSs because each controls a significant proportion of world demand for air travel. Formal critical loss tests have not been conducted, but the likely margin on an extra sale as compared with the cost of the booking fee should show that it would be highly unprofitable for an airline to cease participating in any CRS. This indicates that the upstream market boundaries could be drawn very narrowly, arguing that each of the four CRSs is in a separate market. The medium to longer term is more relevant for the regulator, who may be reticent to intervene if market forces (even if slow-moving) are likely to address the concerns over time. There is evidence that switching between CRSs is feasible for travel agents, suggesting that airlines do in theory have the option to choose

¹⁶ Drawn from material provided in response to the team's questionnaire.

the CRSs in which they participate.¹⁷ In addition, there is some evidence that consumers are willing to use direct sales for certain types of travel bookings. These direct sales already form 20% of bookings and some commentators expect them to grow markedly.

Thus, conservatively, the market is defined to include the distribution of information and sales booking services for scheduled airline seats by CRSs *and other sales methods* on a global basis. This implies that airlines can use these bypass methods, over a long period of time, to constrain the behaviour of the CRSs.

4.1.2 Defining the downstream market

Travel agents need to provide their customers with information about scheduled air services, and have a method of booking and ticketing selected flights on behalf of the consumer. The only automated method of carrying out the search element of this process is a CRS—agents could phone all airlines operating on a particular route, but that would be laborious, and was exactly the system that CRSs were introduced to replace. CRSs compete in providing information and booking services to travel agents (both traditional and Internet-based); they do not provide these services directly to consumers.

In determining the extent of this market, the key issues are very similar to those already considered in relation to the upstream market. How easily can agents switch between different CRSs and to what extent can an agent completely bypass the CRS system?

Substitution between CRSs

As already noted above, most agencies have only one CRS, and even global agencies generally have a single main CRS in each geographic region. This is mainly as a result of the incentive payments (and penalties) imposed by the CRSs that reward the agencies for maximising the number of enquiries and sales through any one CRS (and charge them for failing to meet the pre-agreed targets).

The degree of switching varies according to agency type, both in terms of the feasibility of switching, and the gain from engaging in it. For example, consolidators make very little use of the bespoke elements of the CRS, making switching technically straightforward; also, as they generally deal solely in tickets (and usually at the low-price end of the market), they have a strong incentive to reduce all intermediary costs. Regardless of the amount of switching observed in the market, the steady increases in the incentive payments provided to the agents is *prima facie* evidence of competition among CRSs for travel agent business in the downstream market.

In addition, although CRSs offer different services in different countries, which may provide them with a competitive advantage, this does not appear to be sufficient to warrant a separate market definition, even in these countries, as the other CRSs could relatively easily replicate the services offered. Therefore it is concluded that CRSs are

¹⁷ See the assessment of market power section for a more detailed consideration of the flexibility that airlines actually have in terms of deciding which to CRSs to participate in.

viewed as substitutes for travel agencies, albeit to varying degrees, and the relevant product market is at least all CRSs.

Bypass of CRSs by other booking methods

OXERA is not aware of any full-service search and booking platforms that are comparable to the existing CRSs. In particular, the Internet-based portals have been suggested as alternatives, but all of these appear to use a CRS, or do not provide access to a full range of airlines.

As noted above, the main alternative to a CRS would be a non-automated system that relied on books of flight schedules and telephony-based information and booking systems, or searching individual airline web sites. However, in addition to the inefficiencies involved in using direct sales over a CRS, there are other reasons why a travel agent may prefer a CRS. CRSs bundle a number of services together, such as back-office software or network provision, which are provided in conjunction to the core CRS information search function. If there are economies of scope in combining these activities, it will be more expensive for a travel agent to contract for them independently, and use direct sales for its bookings.

Furthermore, the booking fee offered by CRSs directly acts to impede the use of direct sales. As a result of the productivity payments, the return to the agent from making a booking through a CRS is higher than that from direct sales. Without any substantial countervailing benefits of using direct sales, it is unlikely that direct sales could become a feasible CRS bypass option for travel agents.

If the CRS payment regime were to change considerably, or direct sales to offer additional benefits (such as speed or efficiency) that were not available through CRSs, direct sales could become viable as a bypass solution. This would be particularly the case on routings that were straightforward, or commonplace, where the agent was aware of the operators and potential tariffs. This is currently not likely to be a preferred option for travel agents, and hence should not be considered as a substitute in terms of constraining the prices charged by CRSs.

E-based ventures, such as Orbitz, an Internet travel agent in the USA, could also provide competition to the existing CRSs, but in doing so Orbitz would itself be defined as a CRS, and therefore should be considered a new entrant into the CRS market. This is discussed more fully below.

Geographic scope

The downstream retail market is national. While Internet and direct sales routes can be utilised cross-border, most passengers and travel agencies operate within their national boundaries. There appear to be a number of informal restrictions on passengers purchasing tickets in destination or third-country markets. In addition, customer uncertainty appears to limit the wide-scale use of foreign-based travel agents. Furthermore, the fact that air fares are in general different from country to country indicates that the geographic scope for the downstream market is national. For example, the fare for flights Paris – Hong Kong – Paris booked in France is different from that for the same flights booked in Hong Kong.

Conclusion

There do not therefore appear to be any substitutes to the CRSs in the downstream market. Accordingly the market is defined as the distribution of information and booking services by CRSs to travel agents on a national basis.

4.2 Assessment of market power

The next stage in the competition analysis is the determination of the existence of market power in the relevant market, and in particular whether there is any evidence of dominance. The European Court of Justice (ECJ) has defined the concept of dominance as follows:

Dominant position ... relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of its consumers.¹⁸

Thus, the essence of dominance is the power to behave independently of economic pressures in the market. This market power allows the firm to maintain prices above the competitive level or to engage in anti-competitive conduct to exclude competitors from the market.

A dominant position according to Article 82 can also be held by two or more undertakings, provided that they present themselves or act together in a particular market as a collective entity. In the EU, the concept of joint or collective dominance is used for such cases. The proof of the existence of a collective dominant position involves a two-stage process: it is necessary first to establish the existence of a collective entity and then, where such a position is found, to establish that the collective entity holds a dominant position.

EU case law established the necessity of ‘economic links or factors which give rise to a connection between the undertakings concerned’. In later cases, the Court held that such links could be established by an agreement, decision or concerted practice, but that the existence of an agreement or other links in law is not indispensable to a finding. It would depend on an economic assessment and, in particular, on an assessment of the structure of the market in question. The Court has stressed the need to show that the entities do present themselves collectively because the links are, or the market structure is, such that they will be encouraged to align their conduct or to adopt a common policy in the market and to act to a considerable extent independently of their customers, competitors and consumers.

The checklist routinely applied by the Commission in joint-dominance cases seeks to evaluate the market in question against certain characteristics, which are deemed to

¹⁸ Case 27/76 *United Brands v. Commission* [1978] E.C.R. 207; [1978] 1 C.M.L.R. 429, paragraphs 65–66.

facilitate: tacit coordination, high concentration levels, homogeneous products, stable and symmetric market shares, stagnant demand, inelastic demand, high barriers to entry, similarity of cost structures, and low levels of technological change. This will be further discussed in section 5, which examines whether there is evidence of abuse of dominant position.

There are some significant differences in the dynamics of the upstream and downstream markets. The assessment of market power in these two is therefore dealt with separately.

4.2.1 Assessment of market power in upstream market

If the market is defined in the narrowest sense—ie, that each CRS is a separate market—then it is obvious that each is dominant and possesses monopoly power. Hence this section discusses the likelihood of finding the existence of dominance even where the broader market definition is used in the upstream market. First, the current situation is examined from the perspective of parent and non-parent carriers. The scope for new entry is then considered.

The upstream market is regulated by the Code; as explained, the Code means that a distinction needs to be made between parent carriers and non-parent carriers. The Code obliges parent carriers to participate in each CRS. Unless the parent carrier is willing to forgo access to all the CRSs, and therefore to all the travel agents (apart from its own travel agents and other travel agents which have access to the parent carrier's own internal reservation system), they must participate in every CRS. From the perspective of parent carriers, the CRSs act as a collective entity.

What alternative options do parent carriers have to mitigate any abuse of market power by the CRSs? Discontinuing the participation in all CRSs is not a realistic option. An airline would lose most of the business from the thousands of travel agencies that are served by the CRSs. The market share of the CRSs is currently around 80%. Thus, from the perspective of a parent carrier, the CRSs act as a single entity and the carrier has no way to bypass them quickly. Hence, the CRSs should be considered to have joint dominance over parent carriers as they can behave independently of them.

Non-parent carriers are not obliged to participate in each CRS and therefore have the option to discontinue their participation in just one CRS. This flexibility can be shown to be more apparent than real. As explained above, each CRS provides airlines with access to a large, discrete group of travel agents (ie, each CRS has a strong position in a number of national markets). If a non-parent carrier discontinued its participation in any one CRS, it would lose most of the business from travel agents in that particular CRS.¹⁹ Again, this means that it is not a realistic option for airlines to discontinue their participation in a CRS. This implies that the CRSs can behave independently of the airlines and hence

¹⁹ Some passengers will switch to another travel agent (and thus CRS), but in several countries the success of switching will be limited because of the strong market position of the most popular CRS. This means that a passenger may have to search very hard to find a travel agent not using the pre-eminent CRS.

should be judged to be either singly or jointly dominant. This is confirmed by the powerlessness of the airlines in negotiating any change in contractual terms with the CRSs. Indeed, the market structure is such that CRSs are encouraged to align their conduct and to act to a considerable extent independently of their customers. An example of this is the parity provision, which CRSs have included in the contracts with non-parent carriers. This issue of joint dominance (and tacit collusion) is discussed further in section 5.1.

New entry

At present it appears that airlines have little choice but to accept the terms and conditions offered by the CRSs. There may, however, be scope for airlines to disintermediate the CRSs over time.

The scope for competitive entry or self-supply to operate as a constraint on the market power of the CRS remains marginal in the upstream market. In the short to medium term, direct sales and the existing Internet-based booking systems constitute an inferior distribution platform for airlines seeking to supply information and booking services.

To what extent do new entrants exercise competitive constraints on the CRSs? New entrants into the market of CRSs face three major barriers: aggregation of sellers, the underlying technology to support the distribution infrastructure, and aggregation of buyers.

The aggregation of sellers (ie, airlines) can be achieved by establishing communication links with airlines in order to gain access to fares, schedules and availability, and by entering into contracts with airlines in order to be able to book their flights and issue their tickets. Establishing communication links requires capital, and 'signing up' airlines requires staff time. Given that most airlines predominantly serve particular geographic areas, it may be feasible to generate links to only the most important airlines in any market. However, this may be unattractive to agents that like to see all offerings and have one system. The size of the price differential required to compensate for such inconvenience is an empirical question.

The second barrier is the underlying technology to support the distribution infrastructure. This involves high (sunk) costs (for processing power, data storage, etc), time, technical talent and industry knowledge. It is difficult to give an estimation of the costs of building a new system.

The aggregation of buyers is another entry barrier. New entrants will have to obtain access to travellers. This can be achieved either by gaining direct access to travellers or by building relationships with travel agents.

The Internet may eliminate one of the three entry barriers by providing a framework to aggregate buyers through direct access to travellers. However, aggregating sellers into a single web site still requires communication links to be established and contracts to be agreed with airlines. Furthermore, it still needs the underlying technology to support the distribution infrastructure. Processing power, data storage, technical skills and industry knowledge are required to build such a distribution system.

This explains, at least to a certain extent, why all the on-line travel agents use existing CRSs to make bookings and to access flight information. On-line travel agents can be

described best as powerful search engines (using existing CRSs) that marry travellers and airlines without using conventional travel agents.

Existing on-line travel agents do not bypass the incumbent CRSs as yet. There are currently a number of attempts by the airlines to disintermediate the CRS by developing the Internet-based travel agent model further. For example, Orbitz was set up by five airlines (Delta, Northwest, Continental, American and United), and was initially the subject of an antitrust investigation, as it was alleged that the web site would offer lower fares than competing web sites. The US Department of Transportation ruled in April 2001 that there was no evidence of anti-competitive behaviour and the site was launched in June. Like most Internet travel agents, Orbitz does use a CRS; however, its arrangement is unique in that its deal with Worldspan does not involve the usage of its search engine but merely its connections to airlines. Even this is a temporary arrangement; Orbitz will have a direct link to a handful of airlines by the end of the year. Opodo, a European version of Orbitz, is currently being developed by a consortium of European airlines, but, like Orbitz, uses a CRS as its booking engine.

It is doubtful whether new Internet-based travel agents, such as Orbitz and Opodo, will succeed in significantly increasing competition in the upstream market. Bypassing the travel agents by trying to obtain direct access to travellers is only possible to a certain extent. The bulk of travellers still prefer to make their bookings through travel agents. When complexity or unusualness of the routing increases, travellers are more likely to book through a travel agent. Furthermore, although Internet-based travel agents may take some market share away from CRSs, CRSs will still have strong market positions. Unless airlines are willing to forgo access to all these travel agents, airlines will have to continue to participate in the CRS.

The other means of aggregating demand and bypassing CRS is through the travel agent, but gaining this access to travel agents is difficult. Travel agents often use only one CRS, may be locked into three-year contracts that make it difficult to switch to another provider, and are often provided with software and hardware by the existing CRS. New entrants have to establish a new brand, convince travel agents to use their system, and compete with the attractive incentive booking schemes that travel agents are offered by the existing CRSs.

The high levels of rebate offered by the CRSs to the travel agencies may form a significant entry barrier for new firms attempting to offer services that compete directly with the CRSs. The travel agents benefit considerably from the current system, and would be reluctant to lose this revenue. Moreover, they claim that the rebates are necessary to cover their costs of business, and, if the contribution did not come from CRS rebates, it would have to be recovered from elsewhere.

If the new arrangements were to offer a comprehensive service, this new deal would need to be negotiated with the majority of airlines simultaneously, which may be problematic. Hence, it would be very difficult for a competitor to the CRSs to attract travel agents to use its system without offering the same rebates, or similar cash inducements. Given the overall cost of providing such inducements, any new entrant would need to use the same basic economic model as the existing CRSs.

In other words, it is difficult to consider a business case in which a CRS competitor could profitably enter the market without charging the airlines in a similar fashion to the

existing CRSs. Such a competitor is thus unlikely to be able to offer airlines a new business model that would be preferable to the existing CRS charging structure. Without a means of attracting either agents or airlines, entry is likely to be very difficult.

One particular impact of this conclusion is that it is unlikely that agents will use the Internet as a substitute for the CRSs so long as the current payment structure remains in place. Thus it is only domestic purchases of travel services via the Internet that will be the available market for these on-line agents.

Consequently, it is not likely that a new entrant will put sufficient competitive pressure on the incumbent CRSs to prevent them setting prices and contractual terms independently of their airline customers. Thus the threat of new entry does not reduce the (joint) dominance of the CRSs over the airlines.

4.2.2 Assessment of market power in downstream market

As shown in Table 4.1, each CRS has a high market share in a number of national markets, higher than the European Commission's threshold of 50–60%. This would lead to a strong presumption of dominance for the CRS, with the strong presence in the given downstream market. Furthermore, as explained above, evidence of fidelity or volume discounts structured to drive the marginal purchase towards the CRS limits effective competition from other sources, such as direct sales (over the telephone and through a web site). The incentive schemes may also form a strategic entry barrier for new entrants.

The increasing booking incentive schemes (and up-front payments) offered by CRSs to travel agents could indicate fierce competition in the downstream market. There are three incentives for CRS companies to compete for the business of a travel agent:

- even for a medium-sized travel agent, the booking-fee revenue that a CRS company can gain from airlines is considerable;
- there are significant scale economies for CRSs—unit costs decrease as booking volumes grow;
- the larger the CRS market share in a given downstream market, the stronger its position towards the airlines in the upstream market and the stronger it is in comparison with its competitors in attracting other travel services to its platform on good terms.

The costs of the incentive schemes appear to be borne by the airlines that have little control over the CRSs' marketing and pricing strategy towards the travel agencies. As described above, the degree of competition in the upstream market is very low, enabling CRSs to pass on the costs of the incentives schemes to the airlines. This would mean that the existence of increasing incentive schemes is not necessarily (only) an indication of fierce competition—it is both a symptom of poor incentives and an indication of fierce competition. The fact that travel agents receive most CRS services free, while booking fees charged to airlines have increased considerably over the past five years, indicates that competition in the downstream market is stronger than in the upstream market. What is less clear is whether CRSs would continue to compete as fiercely for travel agency business if they could no longer easily pass the costs of this competition on to the airlines.

In summary, some CRSs have a very strong position in some national markets; however, the CRSs that are smaller in each market appear to compete for this business. Agents that

tender for their CRS business generate multiple participants that offer competitive bids. With evidence of this, it is difficult to argue that any individual CRS has the power to behave to an appreciable extent independently of its competitors and customers, since other CRSs appear to compete with it. Further, detailed investigation of any particular national market may reveal that the generic picture of competitive tendering does not hold, in which case the incumbent may be shown to be dominant. In general, the conclusion is that any one CRS is unlikely to be dominant in a downstream market; the goal is to harness these competitive forces to yield better outcomes for passengers and airlines.²⁰

²⁰ This does not preclude that CRSs may be found to be jointly dominant in any market, nor that particular actions on the part of an incumbent may be found to be anti-competitive (for example, contractual terms that dissuade agents from switching). Such practices are discussed in the next section.

5. Evidence of Anti-competitive Behaviour

Having analysed the existence of market power in the relevant markets, this section sets out the airlines' current complaints in the context of potential anti-competitive practices.

5.1 Tacit collusion

Joint dominance can be defined as a market structure of tight oligopoly that is unsatisfactory from a public-policy viewpoint, in which firms, recognising their mutual interdependence, behave in a coordinated fashion that is not competitive, but that does not involve an explicit anti-competitive agreement. It should be recognised that the mere fact that firms recognise their interdependence with other firms is not sufficient grounds for inferring that observed outcomes are not the result of effective competition. Coordinated behaviour (tacit collusion), but not mere oligopolistic interdependence, is what leads to a situation of joint dominance, as defined here.

A number of criteria for assessing joint dominance, on both the supply and demand side, have been identified in EU competition case law. It is against these criteria that the upstream CRS market can be assessed.

- *Number of firms*—as a general rule, tacit collusion is more likely in tight oligopolies with few firms. Apart from in the Far East, the CRS market is dominated by four firms. This is well within the general rule employed by the US Horizontal Merger Guidelines, which state that markets with up to five or six firms are likely to raise concerns about tacit collusion.
- *Size distribution of companies*—tacit collusion is normally easier between firms with similar market shares. This is again a feature of the CRS market—Galileo, Sabre and Amadeus control approximately 30% of both the upstream and downstream market, with Worldspan taking the remaining 10%.
- *Market shares over time*—stable market shares, as have been witnessed in the CRS industry, are also a possible signal of tacit collusion. Sabre and Worldspan have remained the dominant players in the USA, while Amadeus continues to control the European market. The only changes that have occurred have been as a result of the capture of a new market, such as Sabre's successful foray into the Far East.
- *Homogeneous product*—where competition focuses on price alone, tacit agreements are reached more easily, as firms only need to collude along one dimension. The CRS industry is characterised by limited product differentiation, as most airlines take the full functionality offered by all four major CRSs.
- *Transparency of prices*—tacit agreements are easier to sustain where quick detection of 'cheating' is possible. The prices charged by each of the four major CRSs are always freely available, and the existing rules that prevent a CRS charging different prices to different airlines further facilitate collusion.

- *Structure of costs*—firms in high-fixed-cost industries may be more susceptible to collusive outcomes. They will want to ensure that they operate at full capacity to spread the fixed costs as much as possible, and will all have the incentive to keep prices high enough to recover these fixed costs.
- *Cost differences*—if firms have similar marginal cost functions then individual price preferences at given levels of output are unlikely to differ greatly, making it easier to sustain collusive outcomes. It is highly likely that the four CRS companies have similar cost structures.
- *Technological development*—markets with little technological change, particularly if combined with high fixed costs (see above), may also be prone to collusion. This is because there is less scope for new competitors to enter the market with innovative products, and because competition, as with product differentiation, tends to take place along fewer dimensions.
- *Past and current behaviour*—this can give important indication of tacit collusion (pricing and market strategies are particularly useful in this regard). The CRS market is unusual, in that prices in the upstream market are fixed once a year, with the changes occurring almost entirely on the same date. Galileo, Amadeus and Worldspan brought in their new pricing on January 1st 2001; Sabre's rates increased on February 1st.

The CRS industry exhibits a number of characteristics that make it easier to reach tacit agreements regarding the setting of prices. The possibility of collusive behaviour is enhanced by the existing incentive structure in the upstream market. Each company knows that all the international airlines are obliged to participate in each CRS to reach travel agents in all countries, and therefore have little incentive to compete on price. The simple fact that booking fees are raised year on year at roughly the same time by all four CRS companies suggests that competitive forces are working imperfectly in this market.

Parent carriers are obliged under the Code to participate in all CRSs. This makes the CRSs act as one entity. Furthermore, the CRSs have a parity provision in their contracts with participating carriers that requires the carrier to participate in as high a level in their system as in any other system. The parity provision prohibits a carrier that participates at the most basic level of Sabre, Worldspan, Amadeus and Galileo from upgrading to a higher level in, for example, Sabre, unless it also upgrades to a higher level in the other three CRSs. Likewise, for example, if a CRS's product and services deteriorate (or a CRS increases its price without improving its services), the provision prevents a carrier from downgrading its participation level in that CRS unless it also downgrades its level in

every other CRS. The parity provision thus reduces the need for CRSs to compete with each other to make their enhanced service levels attractive to participating carriers.

5.2 Excessive pricing

Studies of the CRS industry by both Global Aviation Associates Ltd and Garrett Communications Ltd report that the prices charged to airlines by the CRS companies have increased substantially year on year.²¹ Table 5.1 shows the increase in booking fees over the last five years. Prices have increased, on average, by 5% per year.

Table 5.1: Booking fees increase per year (%)

CRS	1998	1999	2000	2001
Amadeus	3.3	5.2	4.5	6.9
Galileo	4.0–7.4	3.4	5.4	6.0
Sabre	7.0	2.9	3.5	7–10
Worldspan	2.2–7.2	3.5	5.9	4.0

Source: Global Aviation Associates, Ltd. (2001). (Garret Communications shows similar price increases.)

Debates between the carriers, CRSs, travel agencies and the regulatory bodies have already taken place concerning the basis on which the CRSs calculate the level of fees to be charged for their services. One specific complaint was that the productivity pricing agreements in existence in the downstream market were borne by the airlines. In 1997, the European Commission commissioned consultants, SH&E, to carry out a detailed examination of CRS charging policies in response to these complaints.²² The Commission was persuaded that the incentive payments awarded to subscribers were legitimate distribution costs and could be included in the booking-fee calculation, but the wider question of whether the overall booking fee was cost-reflective was not answered.

Sabre's Annual Report 2000 mentions that:

[the] cost of revenues for electronic travel distribution increased approximately \$86 million, 9.4%, from \$916 million to \$1,002 million. This increase was primarily attributable to increases in subscriber incentive expenses, data processing costs and salaries and benefits, partially offset by reductions in expenses associated with the Marketing Cooperation Agreement with American. Subscriber incentive expenses increased in order to maintain and expand the Company's travel agency subscriber base.

This makes clear that the increases in booking fees are, at least partly, due to higher incentive payments offered to travel agents. In the downstream market, the CRSs compete

²¹ Global Aviation Associates (2001), 'The History and Outlook for Travel Distribution in the PC-based Internet Environment'

²² European Commission (1997), 'Report on the Application of Council Regulation NO.2299/89 on a Code of Conduct for CRSs, Proposal for a Council Regulation (EC) amending Council Regulation No.2299/89 on a Code of Conduct for CRSs', Brussels, July, COM (97) 246.

against each other for travel agents on the level of incentive payments. In order to maintain or expand its market share, a CRS needs to overbid its rivals—ie, to increase the incentive payments to travel agents. The higher costs of these incentive payments are subsequently passed on to the airlines in the form of higher booking fees. The higher incentive payments a CRS pays to travel agents in order to keep its market share are of no benefit to the airline in a market where CRS penetration is already very high. It may result in better deals and services for travel agents, but not in better services for airlines. The overall outcome for final customers is uncertain, but in mature markets there is likely to be a tendency to inflate total costs. It therefore no longer seems legitimate to argue—as the European Commission did in 1995—that all incentive payments awarded to subscribers are legitimate distribution costs.

Analysis of the profitability of the CRS companies raises further questions as to whether excessive pricing exists within the industry. Table 5.2 shows the return on equity of the three CRSs that are listed on an exchange.²³ It is difficult to find a benchmark against which the profitability of CRSs can be assessed.

A benchmark that could be investigated further is the booking fees that fall under the Amadeus user agreements. These agreements are for airlines using the Amadeus internal reservation system. The fees that Amadeus system users pay for bookings made through the direct sales distribution channel (ie, telephone, own web site or travel agent) appear to be lower than the ‘normal’ CRS booking fees. The difference may be due to differences in the type of service; the fact that, for direct sales bookings, no incentives are paid to travel agents; and profit margins. In order to investigate fully whether this could serve as a benchmark, it would be necessary to determine the extent to which the services under the system-user agreements are comparable to normal CRS services.

It is clear that the return on equity of the three CRSs shown in Table 5.2 is high. For comparison, the return on the FTSE 100 index was on average 15% over the past five years.

Table 5.2: Return on equity (%)

CRS	Return on equity (1998)	Return on equity (1999)
Amadeus ¹	n.a.	40
Galileo	23	55
Sabre	24	26

Note: ¹ The return on equity of Amadeus for the year 2000 is 26%. ² The return on equity is calculated as profit after tax and interest payments divided by total equity.
Source: CRSs’ annual reports; OXERA calculations.

²³ Another indicator is the operating margin. The operating margin for Amadeus is, on average over the past five years, 15%, for Galileo 20% and for Sabre 15.5%. The capital intensity—measured as total fixed assets as a proportion of turnover—is 23% for Amadeus, 19% for Galileo and 24% for Sabre.

5.3 Cross-subsidisation

Article 10.1 of the Code requires that:

Any fee charged by a system vendor shall be non-discriminatory, reasonably structured and reasonably related to the cost of the service provided and used and shall, in particular, be the same for the same level of service.

This requirement only applies to those companies that are subject to the Code—ie, the airlines. CRSs now do much more than serve the airlines. Recent years have witnessed a growth in the bookings made through their systems on behalf of their other customers, such as car-rental companies, hotel chains and rail companies, as Table 5.3 demonstrates.

Table 5.3: Non-air bookings, 12 months ended September 30th

	1999 (no of bookings, m)	2000 (no of bookings, m)	% change
Sabre	38.9	42.9	+11
Galileo	29.1	29.4	+1
Amadeus	27.4	29.6	+8
Worldspan	13.7	15.9	+16
Total	108.8	117.8	+8.2

Source: Garrett Communications (2001), '2001 GDS Yearbook'.

It is possible that the booking fees charged to the airlines are being used to finance the cost of providing CRS services to these other companies. It is not clear whether providing services to these other suppliers of travel vendors involves significant new costs for the CRSs. If the provision of such booking capabilities to these companies requires significant new investment, and airlines' fees are cross-subsidising these costs, the profit figures reported by the CRSs in relation to airlines could be understated. It could be argued that the provisions of the Code that require cost-reflective pricing need to be extended to all suppliers of travel services.

5.4 Anti-competitive practices in the downstream market

The current high levels of productivity payments offered by the CRSs to the travel agents raise several issues of possible anti-competitive practices in the downstream market.²⁴

5.4.1 Cash-back as an entry barrier

The high levels of cash-backs offered by the CRSs to the travel agencies may form a significant entry barrier for new firms attempting to offer competing services to the CRSs. The travel agents benefit considerably from the current system, and would be reluctant to

²⁴ Obtaining high-quality information on commercial agreements between CRS and travel agents has proved difficult. The discussion below is based on information from the two large travel agents.

lose that benefit. Moreover, they claim that the rebates are necessary to cover their costs of business, and, if the contribution did not come from CRS rebates, it would have to be recovered from elsewhere.

Hence it would be very difficult for a competitor to the CRSs to attract travel agents to use its system without offering the same rebates, or similar cash inducements. Given the overall cost of providing such inducements, any new entrant would need to use the same basic economic model as the existing CRSs.

5.4.2 Productivity bookings are volume rebates

Productivity payments are basically quantity rebates. When the contracts are negotiated, the agent specifies its expected number of bookings in the relevant time period (usually on an annual basis), and the CRS quotes a booking rebate on the basis of this figure. The CRS will offer larger per-booking rebates to the agent, the greater the number of bookings that it commits to put through that CRS. The CRS may use the opportunity of higher per-booking rebates to encourage the agent to commit to produce very high levels of bookings in any one year. Such incentives then encourage fictitious and duplicate bookings by agents.

Most of the CRS agree a flat per-booking rebate that applies to all bookings by the agent, regardless of the final annual total. However, the booking targets are an effective incentive regime because of penalties for the failure to meet them. The agent is charged for the shortfall in the number of bookings below the target, and this per-booking charge generally exceeds the value of the rebate from the CRS.

For example, OXERA found evidence of a CRS tariff that offered a £1 rebate per booking, with a penalty charge of £1.50 per booking below the target.

The granting of rebates is a common fact of commercial life and a major way in which suppliers compete on price and attempt to attract customers to themselves and away from competitors. The ability to grant discounts is not a characteristic of market power, but case law on Article 82 establishes that, where undertakings are dominant, their discounting policies will be severely constrained. In *Irish Sugar*, the Court of First Instance summed up the approach of EU competition law to pricing policies:

the case law shows that, in determining whether a pricing policy is abusive, it is necessary to consider all the circumstances, particularly the criteria and rules governing the grant of the discount, and to investigate whether, in providing an advantage not based on any economic service justifying it, the discount tends to remove or restrict the buyer's freedom to choose his sources of supply, to bar competitors from access to the market, to apply dissimilar conditions to equivalent transaction with other trading parties or to strengthen the dominant position by distorting competition [*Hoffman-La-Roche*, paragraph 90; *Michelin*, paragraph 73]. The distortion of competition arises from the fact that a financial advantage granted by the undertaking in a dominant position is not based on any economic consideration justifying it, but tends to prevent the customers of that

dominant undertaking from obtaining their suppliers from competitors [Michelin, paragraph 71]. One of the circumstances may therefore consist in the fact that the practice in question takes place in the context of a plan by the dominant undertaking aimed at eliminating a competitor [AKZO, paragraph 72, Case T-24/93 *Compagnie Maritime Belge*, paragraphs 147 and 148].²⁵

The effect of the discount structure has some characteristics similar to fidelity discounts. This drives most travel agents to use only one CRS in any geographic region. If an agent contracted with more than one CRS, the volume spread across each CRS would be reduced, and the per-booking fee payments would be smaller. The volume discounts are structured to drive the marginal purchase towards the CRS, which limits effective competition from other sources, such as Internet-based travel agents or direct sales.

5.5 Discriminatory pricing

Generally speaking, large travel agents are offered better terms than smaller travel agents. They make more bookings and therefore benefit more from the volume discounts. Furthermore, some of them—in particular, consolidators—are in a better negotiating position than smaller travel agents, as they use their own hardware and software and can easily switch from one CRS to another.

The impacts on the retail market of the deals between different types of travel agent and CRSs are unclear. Large agents are placed in an advantageous position as a result of the discriminatory pricing, but the overall value of the benefits may not make a significant amount of difference. The fact that smaller travel agents continue to exist alongside larger firms suggests that the inequalities of the current system are not such as to force smaller agents from the market.

In order to investigate this issue fully, it would be necessary to determine the exact level of CRS rebates made to different-sized firms, and establish the total sums of money involved compared to the aggregate cost base of each type of agency.

5.6 Consumer detriment

The analysis set out above indicates that there are a number of both static and dynamic market failures in both the upstream and downstream market, and in particular when the two markets are taken together. Airlines are faced with CRS suppliers with considerable market power; travel agents have incentives to behave in a way that increases total costs; and market shares in local markets are high, and very stable.

However, these market failures arise in the intermediate markets of the supply of information and seat-booking services. Although it is likely that failures in intermediate markets result in failures in the final-product market (which, in this case, is the actual passenger journey), it is not automatically the case. For a competition authority, this

²⁵ Case T-228/97, *Irish Sugar plc v. Commission*, judgement 7 October 1999 [1999] 5 CMLR 1300.

distinction is important, as competition is a means to an end, not an end in itself. If there is no significant detriment in the final-product market, a competition authority may choose not to take action to correct distortions in the intermediate markets.

For example, in the above analysis, the airlines are in a weak position relative to CRSs, and the booking fees (ie, prices) paid to CRSs have increased. In turn, however, CRSs have been passing on more to the travel agents, the costs of which are reflected in the CRSs' cost base. If competition between travel agents for customers competes away the additional revenue received from the CRSs then consumers may be no worse off as a result of increased payments by airlines to CRSs. This will be the case when travel agents use the revenue to produce benefits valued by customers (including discounting ticket prices), even if the original payments from airlines to CRSs are not related to the basic costs of running a CRS system. It is therefore possible that actual ticket prices are no higher than they would be if the intermediate markets were more effectively competitive.

6. Summary of Economic Analysis

The CRSs can be considered a distribution platform through which airlines sell tickets to travellers, via either traditional or Internet travel agents. From a technical point of view, each CRS offers the same kind of services and functionality (search, booking and ticketing functions). However, the CRSs have different geographic strengths. For example, Amadeus offers access to most of the travel agents in Germany (82%), Sabre gives access to 40% of the travel agents in the USA (and only to 5% of the travel agents in Germany), while Galileo has a market share of 73% in the UK.²⁶

6.1 Airline–CRS relationships

The CRSs are not substitutes from the airlines' perspective—each CRS provides access to a large, discrete group of travel agents. This means that, for the airlines, participation in all the four major global CRSs is essential, even if it is not mandatory for non-parent carriers. If an airline were not to participate in even one of the major CRS companies, it would lose much of the business from the thousands of travel agencies that are served by that particular CRS. Thus, from any major airline's perspective, each CRS constitutes a separate market and each system possesses market power over the airlines.

However, in the long run, CRSs may be considered substitutes. This mainly depends on the level of switching among CRS users—the travel agents and indirectly travellers themselves. For example, if an airline discontinued its participation in one of the CRSs, the airlines would not lose all the travel agents/consumers in that particular CRS. It is possible that, in the long run, some of the travel agents would switch to another CRS, while it is also feasible that some travellers would use an alternative travel agent linked to a different CRS.

Furthermore, it could be argued that direct sales (either telephone-based, or those through airlines' own travel agents or web sites) can be regarded, at least to a certain extent, as a substitute for CRS. For some airlines, direct bookings are an important distribution channel, particularly for domestic sales. None the less, the direct sales distribution channel remains an imperfect substitute. The probability of consumers using a traditional or on-line travel agent (and hence a CRS) increases as the consumer's required routing becomes more complex or unusual. This is because the CRS is a very efficient means of comparing different options. Hence, although all CRSs could be seen to be in the same market, in the short term, it is recognised that global airlines have no choice other than to subscribe to each of the four largest CRSs in order to gain access to their travel agents (and thus potential travellers).

In the long run, CRSs may face competitive pressures from new entrants. New entrants into the CRS market face three major barriers: aggregation of sellers, underlying technology to support the distribution infrastructure, and aggregation of buyers.

²⁶ As at 1995. Indications are that its market share has since fallen.

The Internet eliminates one of the three entry barriers by providing a framework to aggregate buyers. However, aggregating sellers still requires establishing communication links and entering into contracts with airlines. Furthermore, it still needs underlying technology for data storage and processing. This explains why all Internet travel agents use existing CRSs to make bookings and to access flight information. The existing Internet travel agents do not replace the CRSs but only disintermediate the traditional travel agents. The development of Orbitz is an attempt by US airlines to disintermediate the CRS.

It is doubtful whether initiatives such Orbitz will succeed in increasing competition in the upstream market. Bypassing the travel agents by trying to obtain direct access to travellers is only possible to a certain extent. In addition, if Orbitz wants to obtain access to travel agents, it will have to compete with the agent's existing CRS, which will be offering high volume discounts. Hence, it would be difficult for any new entrant to attract travel agents without offering the same rebates or similar cash inducements. Given the overall cost of providing such inducements, any new entrant would need to use the same basic economic model as the existing CRSs. In sum, it is not likely that a new entrant will put substantial competitive pressure on the incumbent CRSs.

6.2 CRS–travel agent relationship

The relationship between CRSs and travel agencies is very different. While most travel agents tend to subscribe to only one CRS, the main CRSs are considered substitutes by the travel agents. An agency selects a CRS on two key criteria:

- attractiveness of functionality and services; and
- price (generally in terms of level of discounts).

There appears to be competition between the CRSs to sign up travel agents to their particular system. The more travel agents a CRS acquires, the more bookings it receives through its system and the higher its revenues. It should be noted that the US and European downstream markets are largely saturated. CRSs are therefore not competing for new travel agents, but attempt to take market share away from each other.

6.3 Pricing policy

Each CRS adopts a similar charging structure, with airlines charged a booking fee whenever a reservation is made through the CRS system. The CRSs have significantly increased the booking fees over the past five years, on average by 5% per year. As the alternative methods of distributing information to travel agents are very limited, there is no competitive pressure on the prices set by the CRSs. It is not clear whether the price increases have been caused by higher costs, increases in the level of services or functionality provided, or whether they have contributed to higher profits. Most likely is that a mix of all three explanations is relevant.

The CRSs possess market power over the airlines which has enabled them to impose the price increases, and to make high profits without the threat of a demand response of the airlines. Airlines already do not have a realistic option of discontinuing their participation in a CRS, and, further, they do not directly control the volume of bookings made that result in the costs charged to them.

The pricing structure for travel agents is different. Travel agents effectively create revenue for the CRSs, as each booking originated by an agent allows the CRS to charge the airline a booking fee. In order to maximise the number of bookings made by a travel agent through a particular CRS, the CRSs use ‘productivity bookings’, which are basically loyalty discounts. The CRSs appear to use part of the booking fee to cover their costs of acquiring the travel agents’ business (mainly the productivity payments).

6.4 Summary

CRS distribution is a joint product that offers services to both airlines and travel agents. CRSs do not compete for airlines to subscribe to their systems, but appear to compete vigorously between themselves for travel agents’ business. This peculiar structure of the markets in which the CRSs operate has led to the following.

- Significant increases in the booking fees charged to airlines by the CRSs—on average 5% per year over the past five years. Although the cause of these price increases is unclear, the annual report of one of the CRSs mentions that the price increases were necessary due to higher costs of productivity booking schemes for travel agents.
- The CRSs make relatively high profits.
- In the upstream market, the CRSs do not operate in a competitive environment, which may have led to inefficiencies in the CRSs.
- As the airlines provide the majority of CRS revenues, they effectively cover most of the CRS costs, and pay for most of the services provided by CRSs to travel agents, such as hardware and back-office software.
- The European and US markets for travel agents are largely saturated, which means that the vigorous competition among CRSs for travel agents is of no benefit to the airlines. It does not generate greater numbers of bookings, but results in better deals for the travel agents and therefore in higher fees per booking for the airlines.
- Travel agents are paid for each booking. This gives them an incentive to inflate the number of bookings they make—for example, with fictitious or duplicate bookings.
- CRS may use the booking fees charged to the airlines to finance the cost of developing CRS services for other travel sectors, such as car rentals and hotels (cross-subsidisation).
- The high level of cash-backs offered by the CRSs to the travel agents may form a significant entry barrier for new firms attempting to offer competing services to the CRSs. It would be very difficult for a competitor to the CRSs to attract travel agents to use its system without offering the same rebates, or similar cash inducements. Given the overall costs of providing such inducements, any new entrant would need to use the same basic economic model as the existing CRSs.

- The productivity bookings have some characteristics similar to fidelity discounts. The volume discounts are structured to drive the marginal purchase towards the CRS, which limits effective competition from other sources, such as Internet-based travel agents or direct sales.
- Distribution costs are high due to relatively high CRS profits and possible inefficiencies in the CRSs. This reduces consumer welfare.

7. Critique of Political Solutions

The analysis of the CRS market has indicated that relying upon technological innovation and the development of Internet-based alternatives is unlikely to limit the market power wielded by Sabre, Galileo, Amadeus and Worldspan with respect to most, if not all, major airlines. For the foreseeable future, a significant part of the market for air transport will be economically accessible only through CRS systems. Even though the downstream market exhibits some anti-competitive characteristics, it is already more competitive than the upstream market, and, unlike the upstream market, there are fewer fundamental problems relating to the operation of effective competition in this market.

The problems with the current market dynamics, especially with respect to the upstream market, flow primarily from two sources: the market power of the CRS operators with respect to airlines; and the interaction between the upstream and downstream markets through the CRS operators. Thus, in economic terms, there are three types of remedy that could be used to address the problems identified in the upstream market:

- introduce changes in the upstream market that reduce or remove the market power of CRS systems with respect to airlines, by enabling effective competition to operate between CRSs;
- introduce more effective regulation of CRS operators to directly counter their market power;
- introduce regulation that harnesses the competitive dynamic in the downstream market to counteract the market power in the upstream market.

In practice, the number of forms of remedy that could be pursued is limited. The three forms analysed in this section focus on:

- changing the Code;
- monitoring the CRS cost base;
- altering the price arrangements to align incentives more closely.

Changing, or removing, the Code is designed to make it easier for airlines to negotiate with the CRSs, and hence improve the balance of bargaining power between the two parties. The current obligations on airlines (see section 2) mean that parent carriers are faced with an imposed ‘all-or-nothing’ choice, inherently weakening their negotiating position with each CRS.²⁷ Relaxing the obligations on airlines to enable them to choose different levels of functionality, participation that differs across regions, or even the option to delist from a CRS if they do not like the terms they are being offered, may improve the commercial relationship between each airline and CRS.

²⁷ While only ‘parent’ carriers are obliged under the Code to offer the same level of functionality in all CRSs, contractual clauses effectively require ‘non-parent’ carriers to do the same (eg, Amadeus Participating Carrier Agreement, November 1999, Article 2 Clause 1).

However, altering the Code so as to increase the freedom of carriers may not actually succeed in significantly altering the balance of power between airlines and CRSs. As discussed in section 4, the CRSs may have strong individual market power as a result of their control of access to a significant proportion of the distribution chain. If so, changing or removing the Code to give airlines more potential freedom will not actually deliver significantly more freedom, and will not therefore alter the balance of power.

A further potential remedy is to encourage regulatory scrutiny of the CRS cost base. The most extreme form would be full price regulation, with the regulator assessing the appropriate level of costs that should be borne by the airlines. Less intrusive options could include requiring CRSs to be more transparent about their costs. Regulation—in the sense of intervention by the application of rules on behaviour—would be used directly to redress the balance of power in the upstream market.

The third remedy discussed below would require the most significant change to industry practice. This would be that the bulk (if not all) of the charges for booking fees are paid to CRSs by *travel agents*, not airlines. The agencies then recoup these costs through the commission structure from airlines. As with other travel agency costs, such as overheads, the fee for use of CRS systems would be covered by the commission arrangements.

Shifting the payment obligation to the travel agents ensures that they have a strong incentive to bargain hard with CRSs to deliver value-for-money reservation services. As airlines would offer a commission rate to agencies which would be set without a *direct* link to the price that agencies would pay CRSs, there is no direct cost pass-through. Hence, individual travel agents would increase their profit by having a lower cost base (ie, lower CRS prices) than their rival agencies. Competition for travel agency business among the CRSs would be expressed by driving down the prices (and hence costs) of providing CRS booking services.

At present, competition for travel agency business leads to an increase, rather than a decrease, in the cost base of CRSs, as they increase their incentive payments to agencies. In its 1999 annual report, Sabre primarily attributed its 9.4% increase in the cost of revenues associated with electronic travel distribution to ‘subscriber incentive expenses, data processing costs and salaries and benefits’.

A remedy of this sort would still require regulation of the upstream market to ensure that CRSs did not exploit their market power relative to airlines. However, such regulation would be economically simple, as its objective is to shift the economic complexities that can be solved by competitive markets into the more competitive, downstream, market. It therefore relies on the downstream market itself having sufficiently robust competitive characteristics to fulfil this role.

In particular, if travel agencies cannot easily switch between CRSs, then changing the pricing arrangements would not be successful in putting downward pressure on CRS prices. Thus the contractual terms between CRSs and travel agencies may also need to be changed to ensure that switching is facilitated. Other action may also be needed to address any market power issues that arise in the local downstream markets. However, the fundamental economic characteristics of the downstream market are significantly better than the upstream market—travel agents do have an effective choice of CRS, airlines do not—so an effective competitive solution is more likely to be attainable.

In the sub-sections below, each remedy is outlined in more detail.

7.1 Remove or modify the Code

The Code was designed to prevent those airlines that owned a controlling stake in a CRS from exploiting their position in either the CRS market or in the airline market. Airlines could disadvantage competing CRSs by refusing to provide schedules, fares and availability to the rival platform. They could also discriminate against rival carriers via booking fee bias, which would involve the CRS charging lower fees per booking to its parent carriers than to its rivals. The Code addressed these practices by obliging all parent carriers to participate at the same level of functionality in each CRS, and requiring each CRS to charge all airlines the same price for similar services.

The operation of the Code has meant that certain airlines are unable to exercise any choice as to which CRSs they participate in, which has in turn provided no incentive for the four CRS companies to compete on price. Accordingly, four types of changes to the Code are suggested:

- remove it completely;
- allow carriers to opt out of any CRS;
- allow all carriers to choose different levels of functionality across CRSs;
- allow carriers to adjust the level of participation in different regions.

7.1.1 Removing the Code

Removing the Code completely would be designed to return bargaining power to carriers, as the obligations on common pricing and common functionality would disappear. However, as long as the airlines have ownership stakes in any of the CRSs, there will remain risks that they could abuse their position in either the CRS market or the airline market, or both. Even if the airlines themselves do not feel that this is likely, the Commission is unlikely to risk removing the Code completely. In the absence of complete divestment of CRSs by all airlines, some regulatory control of CRSs that have airline equity stakes is likely.

Although controls equivalent to the existing restrictions on parent carriers would, in practice, remain, the current form of regulation is not necessarily essential. If the Code were to be removed, but controls on parent carrier-owned CRSs retained, a different regulatory structure could be used. There are two potential solutions: ring-fencing the investments; or reintroducing certain provisions to alleviate Commission concerns.

The first of these options would be for the airlines to remove even their *potential* influence over the operations of the CRSs. This could be achieved by ring-fencing their CRS investments, or giving up their voting right on certain issues. For example, this could mean that airline board members are not allowed to discuss issues, such as booking-fee increases or commercial policies towards airlines. The practicalities of such measures may, however, be prohibitive.

An alternative option is to reintroduce controls on the CRSs in respect of certain core areas of concern, such as display bias or differential booking fees. These could be relatively light regulation—for example, a requirement to act in a ‘fair, reasonable and non-discriminatory’ at all times towards all airlines on the issues of concern.

Despite the need to retain some regulatory oversight of the CRSs, there may still be benefits from removing a number of elements of the Code. An unwieldy and dated piece of regulation could be replaced with lighter-touch, more sophisticated, regulation that took account of current market practices and characteristics.

7.1.2 Opting out of CRSs

The first potential change would be to allow any carrier (including parent carriers) to opt out of a CRS. If an airline chose to remain subscribing to any CRS, it would be subject to the requirements of the existing Code. Thus, if a carrier is unhappy with the terms offered, or the level of service, it could cease to participate in that CRS.

Non-parent carriers in effect already have such freedom, as they are not bound by this aspect of the Code (although, as already noted, CRSs have included parity provisions in non-parent carrier agreements). However, as described below, in practice it may not be possible for the airlines to exercise any freedom they may gain, and they are effectively compelled to remain members of all the CRSs.

For parent carriers, a potential opt-out would also increase their freedom. However, if they chose to exercise it, there would be a significant danger that such behaviour would be seen as being anti-competitive.

In practice, therefore, the removal of the requirement for parent carriers to participate in CRSs would be likely to lead to the development of a more complex set of ‘rules’ or regulations in order to determine when such a refusal was reasonable rather than anti-competitive. Hence there is a significant likelihood that parent carriers would also ultimately not benefit greatly from this change.

It is also arguable whether such a change would have any impact on the prices charged by CRSs. Airlines, such as BA, are already able not to participate in a given CRS, since they are no longer parent carriers—although this choice may actually be illusory, as explained below.

The problem for any large airline in Europe, whether or not it owns a CRS, is that each of the major four CRSs controls thousands of travel agents around the world. By not participating in a particular CRS, the airline potentially loses all the travel revenue that would have emanated from the travel agency network served by that CRS. The cost of losing access to these agents is likely to far outweigh the transactional costs (mainly the booking fee) from participating in the respective CRS. If airlines are to overcome this problem, they would need to be able to rely on travel agents switching CRSs (to one within which they do participate), or potential customers switching travel agents (to one which uses a CRS in which they participate) or to non-CRS distribution methods. In some downstream (national) markets, this might be the case, but it is unlikely in those markets where:

- the airline represents a small part of the travel agent’s airline business; or
- the CRS has a high share of the national (travel agent) market.

However, many, if not most, of the main national markets will have one or both of these characteristics for major international airlines. Therefore allowing opt-out may not actually provide airlines with any greater choice over which CRSs they are able to participate in.

7.1.3 Choice of functionality

The second change would be to give all airlines the ability to participate in CRSs at different levels of functionality, as a means of facilitating more competition between the CRSs for the business of the airlines. Currently, all four CRSs have a parity provision in their contracts with participating carriers that requires non-parent carriers to participate in as high a level in their CRS system as in any other system. Allowing airlines to choose their functionality level between CRSs would in effect also mean prohibiting the parity provisions included in the non-parent carriers' contracts with the CRSs.

Each CRS provides various levels of service to participating carriers, with the basic level costing about half as much per segment booked as the highest functionality. If an airline decided that the prices charged by one CRS were too high, it could reduce functionality and pay for just the basic product, reducing its CRS costs in the process. However, if a CRS does not induce airlines to take full functionality in their system, they risk losing travel agency clients because the quality of the end product provided to the travel agents is diminished.

Without parity conditions, in order to induce the airlines to accept full functionality, CRS companies will have to compete on quality and price to ensure that airlines are taking similar levels of functionality in their system as with the CRS's rivals. This argument is predicated on strong market forces in the travel agency market, where CRSs have to compete to retain subscribing travel agents. It is the risk of losing these customers that creates the pressure on each CRS to aim to keep airlines participating at the highest level.

The functionality issue has already been addressed in the USA. In 1996 an amendment to the CRS rules was passed which prohibited the CRSs from including parity provisions in their contracts with participating airlines. In its report on the issue, the DoJ acknowledged that 'CRSs have substantial market power over the airlines, but generally not over the travel agents.'²⁸ It was concluded that the parity provisions reduced the incentives for CRSs to lower fees, to tailor their products, and to enhance the service provided.

The DoJ hoped that allowing participation at differing levels would allow the airlines to take full functionality in the CRS that has strength in a given region, and lower functionality in the competing CRSs. The Department of Transportation is currently analysing this issue, but made clear in an interview with the team that no major changes in the market have occurred as a result of prohibiting the parity provision. The dynamic of this process is likely to be similar to that outlined above in respect of allowing airlines not to participate at all in a CRS.

However, even if airlines did downgrade their functionality, the CRSs could alter the price balance between the levels of functionality. In other words, the gap between the prices of basic and full functionality within a CRS would narrow, to limit the incentive

²⁸ Department of Justice (1996), 'Computerized reservation systems contract provision, comments of the Department of Justice', Notice of Proposed Rulemaking: Computer Reservations System Regulations, Washington D.C., USA.

for airlines to take lower functionality. This issue relates to the second remedy, in that it is difficult to assess the ‘reasonableness’, or cost-reflectivity, of the CRS’s prices. A possible solution for the airlines faced with such price increases would be to use competition law, with an allegation of excessive pricing.

7.1.4 Regional differences

The final option considered is to alter the Code to allow airlines to take different levels of functionality in different regions. As discussed earlier, the upstream market is currently a global market that is governed by global agreements between airlines and CRSs. The global nature of these agreements would need to be changed.

The objective of this remedy would be to allow airlines to take full functionality in a CRS where the CRS has a strong market position, and to take lower functionality in areas where it is weak. Low-functionality subscription by airlines affects the ability of a CRS to offer travel agents a competitive product if other CRSs are able to offer full airline functionality.

Therefore, for any CRS attempting to build market share in an area where it had a weak position, reduced airline functionality subscription in that area would be undesirable. Accordingly, CRSs could be expected to negotiate better deals with the airlines to ensure that they retained the airlines’ full functionality in these regions. An airline could use any improved deals negotiated with one CRS to extract better terms from others. In this way, competition upstream in general could be stimulated.

The risk of this change is that it may operate contrary to its intended purpose by reinforcing the position of the largest CRSs in any particular country, potentially encouraging market sharing. If CRS terms continued to be negotiated on a standard global basis (ie, similar prices for similar service levels in all local markets), CRSs would not want to jeopardise their returns in their strongest markets by agreeing to worse terms in other markets. Hence, they may accept lower airline functionality in the smaller markets in order to minimise the profit impact. This would effectively signal to the incumbent that they were not serious about entering or vigorously competing in those markets where they are relatively weak. Whether this is a profit-maximising strategy depends on margins and the relative size of the different markets.

If CRSs introduced prices differentiated by region, a more dynamic competition process might result. In those markets where a CRS was relatively weak, it would have an incentive to offer lower prices to ensure participation at the highest levels, so as to be able to offer travel agents the best possible service (relative to the other CRSs). However, unless the threat of exiting (or downgrading participation in) the dominant CRS(s) in that region is real, the effect on airlines’ total costs of using CRSs is unlikely to fall significantly, as they would only obtain good deals where they sold few tickets.

In addition, it is unlikely that the price reduction to airlines from not participating in certain regions would be particularly large. Having established a network in a region, the marginal costs for the CRS of operating its system are relatively low. The only reason that the price for a particular region might be high is if the CRS has sunk considerable costs in developing the network. In this case, selective withdrawal by airlines may raise cost-recovery problems, potentially increasing the cost for all airlines remaining in the region. *In extremis*, this could deter CRSs from expanding into new regions.

7.2.5 Conclusion

Any modifications to the Code do not address the key issue of CRS market power. Airlines would still be reliant on the CRSs as their main distribution channel, so the impact on the airlines of reducing functionality may be much greater than the effect on the CRS. This is particularly the case if travel agents are reluctant to switch between CRSs.

In sum, it can be concluded that revoking or modifying the Code may result in more flexibility in the upstream market and may underpin other remedies (described below). However, alterations to the Code (or its full removal) alone are unlikely to be successful in increasing competition in the upstream market, and reducing the significant market power currently enjoyed by the CRSs.

7.2 Monitoring the cost base

Under Article 10.1 of the Code, CRSs are obliged to charge cost-reflective prices. In addition, the Commission has found that payments to travel agencies are legitimate distribution costs:

given the close correlation between the level of incentive payments to subscribers and the extent of competition between CRSs in a particular market, the Commission is persuaded by the CRSs' assertion that incentives awarded to subscribers are distribution costs.²⁹

However, this statement was made four years ago, when the levels of payments to travel agencies were lower. Currently, the actual costs and margins of the CRSs are poorly understood and are very difficult to estimate from public-domain information. CRS prices are more likely to reflect costs if there is adequate knowledge of what these costs are, and some form of price–cost monitoring.

There are several forms of cost analysis that could be undertaken by the Commission, which differ in the level of intrusion:

- formal price regulation;
- transparent cost reporting;
- arbitrary price cap.

7.2.1 Price regulation

The strongest level of intervention is direct price regulation. In this scenario, the regulator sets the price for the CRS's fee schedule, and may also dictate how that price should change over time. Such a solution would involve the regulator undertaking a detailed review of the operating costs, efficiency, asset base and profitability of the CRS

²⁹ European Commission (1997), 'Report on the Application of Council Regulation NO.2299/89 on a Code of Conduct for CRSs, Proposal for a Council Regulation (EC) amending Council Regulation No.2299/89 on a Code of Conduct for CRSs', Brussels, July, COM (97) 246.

companies. It would require costs to be allocated across airline seat bookings and other travel services, such as train and car hire.

Having done this, the regulator would need to determine the costs that are appropriate for an airline to bear, particularly in relation to the costs of travel agent acquisition and remuneration. Given the dynamic nature of the market and changing cost bases, the study would have to be repeated regularly.

Such cost studies are commonplace in regulated industries, particularly for setting access prices for telecommunications, gas and electricity networks. They are also used to set retail prices where there is no effective competition.

An example of this, outside of the standard regulated utilities, is the full price regulation proposed by the UK Monopolies and Mergers Commission (MMC) in 1995 in relation to Yellow Pages. In this instance, the market was for classified advertising services, with Yellow Pages, a subsidiary of BT, controlling 84% of the market. The advertising rates charged had increased significantly over 10 years, on average between 1.5 and 3% in real terms, and high levels of returns on both sales and capital employed (40.8% and 134.3% respectively in 1995) were thought to be further evidence that competition was lacking.

The MMC recommended that prices be regulated according to an RPI – 2 formula. Analysis of the cost base and profitability of Yellow Pages was undertaken on the basis of information provided by the company. The figures were then compared with all major UK industrial and commercial companies, 15 UK printing and publishing companies, nine advertising companies and nine software companies. The MMC also carried out a more focused comparison with other suppliers of classified directories (eg, Thomson), suppliers of similar products and the four closest publishing groups. The investigation took 12 months.

The outcome of such a process should be a reduction in the CRS charges to airlines. This benefit is predicated on the assumption that existing price levels are considered too high and are not cost-reflective. Further, it is assumed that airlines would not be expected to continue to pick up the full costs of the travel agent incentive scheme. If these assumptions are incorrect, all solutions aimed at addressing cost-reflectivity will fail. The key disadvantage with formal price regulation is that it requires significant resources, the CRSs have an information advantage, and such investigations need to be repeated. All of this is costly and highly intrusive.

A further implication is that, if the regulator does not allow CRSs to recover certain costs from airlines, these costs must be recovered elsewhere or removed. Thus booking fees to other travel services may increase, and incentive payments to travel agencies are likely to fall. Indeed, CRSs may need to return to charging travel agencies for the services provided.

However, higher levels of competition in the downstream market would mean that this solution has the potential to result in more efficient outcomes. As CRSs compete for travel agency business, they would try to charge travel agents the lowest possible positive fee, to prevent switching to rival companies. There would also be incentives to make efficiency gains to reduce costs, allowing a CRS to lower travel agents' fees and gain retail sales at the expense of rival companies.

7.2.2 Transparency in cost reporting

Full price regulation is a significant regulatory intervention and one that many regulators hesitate to initiate. An alternative solution is to rely on self-regulation. This could take the form of requiring the CRSs to submit to regulators periodic (for example, every two years), audited cost studies to justify prevailing prices. Another way of encouraging more transparency would be to require CRSs to present directly to the airlines the underlying changes in costs that result in price increases, such as increased investment.

Such solutions are far easier to administer than full price regulation, but are also more straightforward to undermine. The likelihood of CRS costs falling for airlines is therefore far from guaranteed.

A solution similar to this was reached in the MMC investigation into the petrol industry in 1990. The regulators found that it was difficult to analyse the cost base in this industry, as petrol is a joint product and has to be produced with other petroleum products in the same process. This makes it impossible to decide how much of the total cost of production relates to petrol as opposed to other products. The MMC accepted the incremental cost analysis used by the refiners. This indicated the incremental cost of producing an additional amount of petrol without altering the level of production of the other products. The incremental cost was therefore made up of the extra crude oil required and any variable costs (chemicals and electricity) involved. The MMC suggested that the industry should be monitored on an ongoing basis according to a set of indicators, including the difference between the prices of crude (which was taken to be a good proxy of incremental production costs) and end-product prices.

Other examples can be found in the banking sector. Banks engaging in cross-border payments use transfers called interchange fees to balance costs between the sender and the receiver of funds, to limit double-charging and to facilitate fund transfers. Card-payment schemes also use similar fees to balance costs between the bank that serves the retailer and the bank that serves the cardholder. Competition concerns have arisen over whether these fees are set at an appropriate level.

The recent regulatory solution in the case of Visa was to introduce objective benchmarks against which to assess the fees and transparency.³⁰ To ensure transparency, Visa must submit its cost studies to the Commission, and they must be audited by an independent firm.

This follows a similar judgement with respect to Girobank schemes in the Netherlands.³¹ In that case, at the Commission's request, the banks in question decided that the amount

³⁰ Notice pursuant to Article 19(3) of Council Regulation 17. Case Comp/29.373—Visa International (2001/C 226/10), para. 11.

³¹ 1999/687/EC: Commission Decision of 8 September 1999 relating to a proceeding under Article 81 of the EC Treaty (IV/34.010—Nederlandse Vereniging van Banken (1991 GSA agreement), IV/33.793—Nederlandse Postorderbond, IV/34.234—Verenigde Nederlandse Uitgeversbedrijven and IV/34.888—Nederlandse Organisatie van Tijdschriften Uitgevers/Nederlandse Christelijke Radio Vereniging) (notified under document number C(1999) 2056).

of the interbank charge was to be reviewed periodically in the light of a report by an independent expert as to the cost of using the most efficient processing method. This was to be done immediately after the Commission's decision, and every two years thereafter. The purpose of the periodic review was stated to be to ensure that the interbank charge continued to be related to the level of most efficient costs. The Commission is informed of the independent expert's findings and has also reserved the right to make the results of the study available to business users of the processing system (albeit in the form of aggregated figures which do not permit individual undertakings to be identified).

The risks with such a system are that the regulated firms have much better information about their costs and can present (or limit) information to their advantage. External audit can help reduce this practice. An example of this problem is seen in the undertakings agreed with BSkyB by the UK Office of Fair Trading (OFT) in 1996. In order to assess whether BSkyB was pricing its programmes in an anti-competitive manner, the OFT required the broadcaster to account for its wholesale and retail activities separately. This accounting obligation was not successful, as it did not specify sufficient detail for the regulator to judge whether pricing was at the correct level.

Without in-depth knowledge of the industry, it can be difficult for the regulator even to ask the right questions of a firm. The more penetrating the analysis, the closer this option is to the first cost measure—formal price regulation. In the BSkyB case, the OFT has been reviewing these undertakings since March 2000, and, at the time of writing, had not made a decision. This is an indication of the resources required to address such problems adequately.

7.2.3 Arbitrary price cap

The final option is to set an arbitrary price for the booking fee charged by CRSs to airlines, and expect the remaining costs to be recovered directly from travel agents. This model implicitly assumes shared cost recovery, but does not require the regulator to undertake any cost analysis. As long as the contribution made by the airlines falls short of the total costs, then the CRSs must seek further funding from the agencies.

As discussed above, this improves the incentive structure in the industry and encourages efficiencies. The benefits of such an approach is that no cost study is required, and the competitive pressures from the travel agencies can be expected to ensure that costs are kept low. Airlines have a formal constraint placed on increases of their contribution to the CRS costs, and hence the airlines' obligation is capped, unlike the existing system.

This option does have clear difficulties, however. It may be (politically) difficult for the regulator to set the initial cap, given that both CRSs and travel agencies would be likely to complain that the system was unfair. This may result in the regulator having to undertake a general analysis of the cost base of the CRSs to quantify which costs are

‘vendor-allocable’, which are ‘subscriber-allocable’, and which are shared.³² Once this is required, this solution is again similar to full price regulation.

As CRS costs may alter over time, it will be necessary to revisit the level of the cap periodically. For example, if they reduce their cost base, the prices they charge to airlines could again exceed their costs. In addition, problems may arise over the recovery of CRSs’ investment in new technology or in developing their systems to supply services that airlines want, but travel agents do not. Under these circumstances, getting the travel agents to pay for the investments is unlikely to be successful, and it is unlikely that such services would be provided at all.

Therefore, the imposition of a price cap would not be a one-off exercise, but would involve some degree of ongoing revision. The cap itself would have to be sufficiently flexible to ensure that investment incentives are retained for the CRSs’ continued system development.

7.1 Introduction of market mechanisms

The least interventionist regulatory solution would be to facilitate a change in the structure of the operation of the market such that market forces have a greater effect. The objective would be to produce a market structure that was self-sustaining in the long run, and that would not need continuous regulatory involvement.

OXERA considered a number of options for improving the incentives within the market to produce this kind of solution. The example presented in detail below appears to be the most suitable in economic terms, and the most likely to fulfil the requirements detailed above. However, the practical issues related to its introduction have not been considered, and other alternatives may be available that address in whole or in part the same problems.

7.3.1 Subscriber-based pricing

An extension of the suggestion in section 7.2.3 that has more radical consequences is a shift towards subscriber-based pricing where the (arbitrary) price cap is effectively zero. In this scenario, the CRS costs would be borne by the travel agents through fees, while no charge would be applied between airlines and CRSs. Any products or services offered by the CRS which are specifically for vendor use (such as the advertising of the CRS system) would continue to be recovered through vendor charges. In essence, only those services provided by CRSs, where airlines had a realistic option of declining them, would be chargeable to airlines. The cost of all other services provided by CRSs would be recovered from travel agents.

³² This method was advocated in the SH&E study of CRS charging principles.

In this remedy, the reservation fees are simply seen as another element in the cost of the inputs that a travel agent needs to deliver travel services. The travel agent procures these services directly—as with communications services, computing facilities, etc—and recovers the costs either directly from customers, or from the supplier of the service (eg, airlines or hotel operators), through a commission.

The key advantage from such a shift is the improved incentives. Agencies use the CRSs more efficiently, as they bear the incidence of CRS costs. This has the potential to lower the number of speculative and fictitious bookings made.³³

Subscriber-based pricing also encourages the travel agents to negotiate on price, as there is no direct cost pass-through. Travel agents would recover CRS costs from the airlines (or other travel-service suppliers) through the commission system. Airlines would pay travel agents a flat-fee commission per booking, based on the average level of CRS charges. This would provide an incentive for the travel agent to negotiate with the CRS.

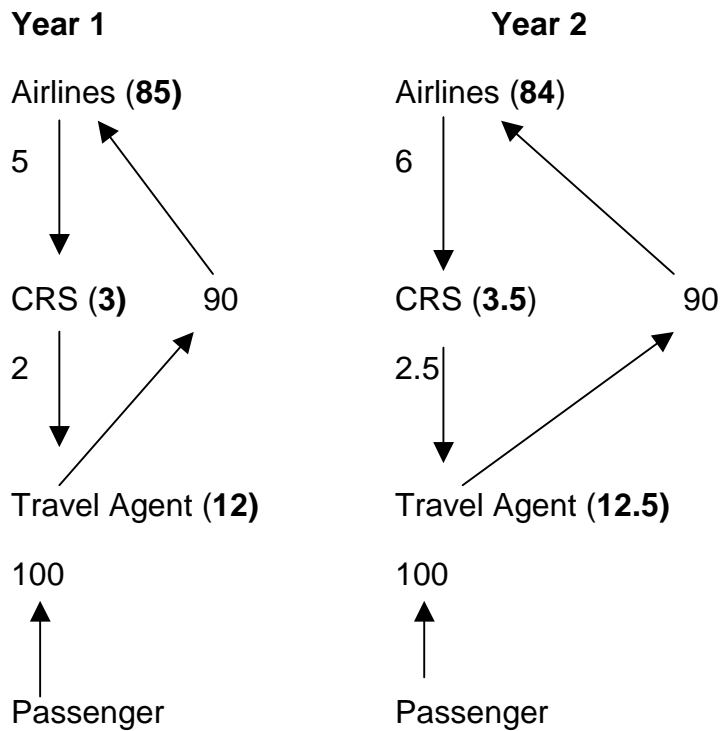
If a travel agent negotiates successfully with its CRS provider, there is the opportunity to earn higher returns than its competitors by beating the average CRS charge ‘yardstick’ set by the airlines. This yardstick will be the portion of the overall commission that is intended to cover CRS costs. Similar yardstick incentive schemes are common in the regulation of the water sector and pharmaceutical reference pricing schemes.

Another advantage of this proposal is that, when introduced, all stakeholders could be made no worse off. The benefits flow over time because the dynamic incentives are for agencies to put pressure on the fees charged by the CRSs. As airlines observe these declining fees, commissions can be reduced to share the benefits between airlines and agencies.

The proposed change in market structure is illustrated below, using the purchase of a £100 ticket at a travel agent as an example. The first scenario illustrates the existing situation, where the annual increase in CRS fees is used to finance a more lucrative incentive payment, and also results in higher CRS profits.

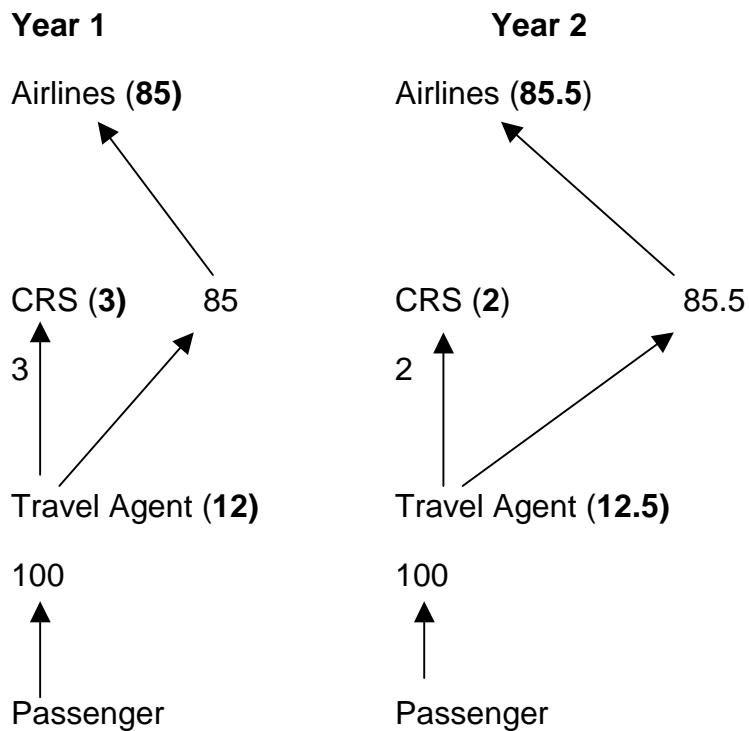
³³ Speculative bookings occur when a travel agent reserves seat inventory in anticipation of travel clients’ demand. Fictitious bookings are those bookings initiated by a travel agent which are unrelated to any current or expected use by travel clients.

Scenario 1: Existing situation



In the subscriber-based pricing alternative, the travel agent is remunerated for the cost of CRS services by the airline in the form of increased commissions in year 1. In year 2 competition between the CRSs for travel agent business reduces the costs of CRS services incurred by the agents, and results in increased revenues for both travel agents and airlines:

Scenario 2: Subscriber-based pricing



There are two assumptions in the subscriber-based pricing model above. First, it is assumed that in year 1 all the CRS cost savings that are achieved by the airlines are passed back to the travel agencies in the form of increased commissions, so no party is made worse off initially. Comparing year 1 in the above two scenarios shows that the travel agent's commission increases from 10% to 15%, which maintains its net position at 12% (once it has paid CRS fees). If this were not to occur, travel agents may be forced to increase customer charges so as to recoup the cost associated with bearing some of the CRS charges.

The second assumption is that travel agents are able to negotiate lower CRS fees due to the threat that they will switch providers. The main feature of the model is that CRSs would derive their revenues solely from the downstream market. If the subscriber (travel agent) market is more price-sensitive, a switch to more refined CRS pricing may take place. CRS companies are likely to find it much harder to impose the yearly price increases that have been a recent feature of the market.

In addition, making travel agents pay for CRS services delegates the airlines' monitoring function to the agents. Currently, the airlines pay for the CRS services in large part, and are keen to ensure that CRSs are used efficiently and offer value for money. This is very difficult when the travel agents, which generate CRS demand, bear little or no responsibility for their actions.

Once travel agents directly incur the costs resulting from their choices, they will become more efficient in their CRS use. They are also likely to put pressure on the CRSs to introduce more transparent or disaggregated tariffs that allow the travel agents to monitor their CRS costs.

The success of such a scheme is predicated on the ability of travel agents to switch. As discussed in sections 2 and 4, there is some evidence to suggest that the threat is credible. In particular, CRSs pay large incentive payments to travel agents to keep their business, which would be unnecessary if the travel agent were completely 'locked in'. However, there is also evidence of switching costs. First, migrating bookings from one system to another is risky, with the possibility of potentially serious and costly errors. Second, where a travel agent uses the network and application software of the CRS, it needs to reconfigure its systems and may also have to train its staff how to operate the new system if it chooses to switch.

The ability of a travel agent to switch may also be constrained if one CRS has a dominant position within the national market. This has occurred in countries such as Germany and Spain, where Amadeus has over 80% of the market, and in the UK, where Galileo has over 60% of the market. In these markets, the other CRSs may not be able to offer similar levels of service and functionality, providing only a weak alternative to the main incumbent CRS.

The ease of entry into new national markets for the existing CRSs is unclear. As the main CRS technology already exists, the cost of moving into a new country is potentially low. However, the need to set up implementation, marketing and customer functions within that country may deter new CRS entry. There may also be limited potential to penetrate further into a new country if the majority of travel agents are locked into contracts with other providers.

A further problem may arise in the future. CRSs may vertically integrate into the travel agency market, lessening the competitive pressures. For example, Cendant, the new owner (subject to regulatory approval) of Galileo, has also acquired Cheap Tickets, a travel agency. Vertical integration resulting in common ownership of CRS and travel agents would remove the transparency of pricing in the market. The airlines would not be able to rely on the charges reported by the integrated travel agents as an accurate measure of actual CRS costs.³⁴ Airlines could rely solely on information from independent travel agencies, but if integration and consolidation were marked, this would be difficult. Such structural changes in markets have undermined similar procurement arrangements in the pharmaceutical industry.

Another problem with the subscriber-based pricing system is that travel agents may not be willing to pay for the CRS services that airlines wish to have provided. Airlines could still agree separate arrangements with the CRSs to pay for functionality and service upgrades that they wish to make available to travel agencies. Once airlines return to a positive charging arrangement with the CRSs, however, there is an incentive for the CRSs to inflate the costs of any airline-specific improvements, effectively cross-subsidising the cost of the downstream business again.

However, as with the discussion in section 5.1, once there is competition for travel agency business, the CRSs will want airlines to improve their functionality and may be willing to negotiate reasonable deals to ensure that an airline does not improve its offering in a rival CRS.

Subscriber-based pricing also has the potential to result in discrimination against smaller travel agencies. Large travel agents are able to negotiate more favourable booking fees with the CRS and better commissions with the airlines, because of their economies of scale. Smaller agencies may discover that they are bearing a disproportionate element of CRS costs, as the CRSs offer much better deals to the larger agencies. Without the ability to offer different commissions to different agencies, airlines may not increase commissions sufficiently to compensate the smaller agencies, leading to small travel agents being worse off and potentially non-viable.

Such discrimination also occurs in the current arrangements, with small agencies receiving significantly lower incentives than the large business agents, such as Carlson Wagonlit and American Express. Smaller firms will have a much weaker negotiating position with regard to the CRSs. By changing the structure so that agencies are paying, rather than receiving, fees, this discrimination is made significantly more transparent. The practical implementation of the subscriber-based pricing mainly depends on the effectiveness of prohibiting CRSs from charging airlines booking fees. There is a risk that

³⁴ Because the agent would no longer be independent from the CRS, it would lose the incentive to maintain cost control, and to monitor the CRS charges. The vertically integrated firm would gain from passing greater charges from the agent to the airline. This situation only becomes a major problem when a significant proportion of the travel agents in any one area is owned by CRSs.

CRSs will seek to undermine the subscriber-based pricing by increasing other charges, such as charges for data on number of bookings per region and per travel agent, or by introducing charges for services that are not covered by the Code or the subscriber-based pricing regulation. Where airlines can reasonably do without these services (either in total or from a particular CRS), the ability of CRSs to leverage their market position against airlines will be limited. However, if airlines are in a weak bargaining position in respect of these additional services as well, subscriber-based pricing will not improve their position, and may increase the incentives on CRSs to exploit any remaining market power that they have.

Finally, changing the structure in this way increases the potential power of the airlines against travel agencies. In the current system, agents have an alternate source of income and are not solely dependent on airlines. By introducing this subscriber-based pricing, travel agents bear risks arising from their CRS usage. Agencies may be vociferous in their dislike of such a change, which increases the control airlines have over agencies' income streams.

8. Implementing Change—The Political Approach

The original brief from AEA set out two objectives: in the medium term to change the relationship model between airlines, agents and CRS vendors, and in the short term to trigger action by the European Commission where CRSs are not complying with the Code of Conduct.

The two objectives are interlinked.. However, there is no easy way in the short term to increase the airlines' economic bargaining power in relation to the CRSs. In addition, the problem that the Code is primarily designed to address remains (parent airlines using daughter CRSs to distort competition in either the airline market or the CRS market). However, this is not the main problem facing AEA airlines with respect to CRSs (which is about CRSs exploiting their market power with respect to airlines in general).

The analysis in sections 2, 4 and 5 demonstrates the uncompetitive elements of the current market structure and dynamics, and the need for change, providing a broad competition policy backdrop against which the more immediate issues should be considered.

8.1 Political and regulatory blockages

The present market structure has become blocked. The CRSs have been able to shelter behind the Code, refusing dialogue with the airlines, dismissing enquiries from the European Commission, and refusing to respect newly introduced provisions, such as those relating to group purchase of data, while at the same time building their businesses.

8.2 Unresolved issues

8.2.1 The German double-fee situation

This is a telling example of the inequities of the present structure of the CRS market, The Board of Airline Representatives in Germany (BARIG) has already been involved in (apparently fruitless) discussions with the CRSs and 2 roundtable-meetings initiated by the Commission ended without an effective solution..

8.2.2 'Group' definition for MIDT purchase

The CRS hostility to this provision was demonstrated by their taking the case to the European Court. However, despite the Court of First Instance judgement in December 2000, the CRSs appear to have refused to accept any group applications for data. This is a clear breach of the Code where the Commission should have acted more vigorously. It is still not clear when the Commission will propose modifications.

8.2.3 AEA's formal complaint on alleged collusion

On March 15th 2001 the AEA made a formal complaint to the Commission on the CRS fee notification. There is little indication that this complaint has been followed up, except with a holding reply on April 10th 2001.

This is potentially the most far-reaching and sensitive issue, but one which goes to the heart of AEA's grievances. The economic analysis herein provides the general basis for opening a procedure.

8.3 Formal review of the Code

The Commission has an obligation under the Code to investigate complaints and to 'initiate procedure to terminate infringement'.

9. Conclusion

This report has outlined in some detail the challenges facing the airline industry, in terms of both the economic uncompetitiveness and the political iniquities of the current computer reservations regime.

There is a strong case for changing the current regime to address the inadequacies of the current market structure and creating a structure that restores competitiveness to all parts of the system..

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