Travel Information Systems in the 21st Century

Written Statement of

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to the

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Introduction

This testimony is aimed at looking at the remit of the National Commission largely in economic terms. It seeks to consider the efficiency implications of the existing mechanism of transmitting information about air services to potential customers. It is much less concerned with normative matters concerning who should reap the largest benefits of any particular structure, or whether any particular group should be protected for reasons other than ensuring the system is as efficient as possible. By efficiency in this context is meant the provision of a service to the final customer that meets the demands of that customer at the lowest price.

Initially, by way of background, a brief outline is provided of how the informational system that necessity parallels the physical airline system has developed over time. This offers an economic interpretation of what has happened since the regulatory reforms of the US industry in the 1970s. It is important because it highlights the diversity and flexibility of systems over time. The document then sets the current debates over the role of intermediaries into the context of modern airline economics and with regard to some aspects of information economics.

The Growth of Travel Agents and Other Distribution Systems

The nature of the passenger air transportation sector has changed considerably since the enactment of the 1978 Airline Deregulation Act. A variety of studies over the years have highlighted the beneficial changes that have taken place since 1978, and almost certainly resulted from the deregulation. The airline industry, however, is a constantly evolving one and there are inevitably issues that periodically emerge.

It is clear that many more people use both domestic and international air transportation than before 1978 and they have a much wider range of price/service quality options to choose from. There are currently debates about the degree to which fares have fallen since deregulation because superficially it would appear that they were already declining prior to 1978. The downward trend in the preceding period, however, would seem closely tied to the introduction and wider use of jet aircraft (mainly from the mid-1960s) – a shift that offered a once-for-all reduction in seat costs per mile and could not be repeated. This effect had

largely been exhausted by the time of deregulation. The change since 1978 was one of allowing greater managerial flexibility in the way services are provided and many of the benefits came during the first decade after deregulation. They were separate effects from those brought about by the introduction of jet aircraft, but both the move to more efficient aircraft and to more efficient networks can be viewed as largely once-for-all changes.

The growth of travel agents from the late 1970s largely reflected the fact that with rising incomes and lower fares there was more 'novice' travelers seeking information. Further, airline passengers had a far greater choice of services. In the days of regulation, there were a limited number of inter-state carriers that were given monopoly power over specific routes and were constrained to basically levying a formula determined coach fare and a formula based first class fare. Many bookings were made directly with the airlines (often at 'city ticket offices) because choices were very limited and information requirements were very basic. International services, where regulations began to weaken with the inception of the 'Open Skies' initiatives from 1979, but more strongly in the 1990s, also saw a much wider range of service and fare combinations as IATA based rates ceased to dominate. Travel agents also combined travel with hotel and other complementary requirements in this more complex environment.

Initially airline deregulation inevitably complicated the world for travelers as many more carriers entered markets and as passengers now had to make choices involving several airlines, often over competing hub based networks. Choices expanded further as yield management techniques became almost ubiquitous and passengers had large varieties of fare/service combinations to choose between. Frequent flyer programs added different incentive structures to decisions, airline alliances provided more variation in terms of linkages, and hub-and-spoke network configurations provided a variety of routing and trip scheduling possibilities. The initiation of the Open Skies policy, combined with rising incomes, shifting demographics, and increasing leisure time also led to more international travel that, by its nature, tends to often tends to require information very different to that associated with domestic US air travel.

In these new circumstances, the US airlines largely out-sourced the information and booking parts of their activities. The advent of the computer reservation systems (CRSs) provided interfaces between the yield management systems of airlines and the various demands of customers. But there was the need, however, for a human interface. Travel agents offered the service of acquiring and processing information, albeit at a financial cost to the overall system. They served the role of the final leg of the transmission mechanism between the airlines and their potential customers. The airlines, for commercial reasons, focused on their core business and basically, through the commissions they paid, out-sourced their distribution to the travel agents.

The importance of travel agents as an intermediary between the airlines and their customers grew as air travel expanded in the deregulated environment and with this their number and their financial returns also grew. They also served a practical function for the airlines in an age where paper tickets were used. Travel agents provided a cheap means of physically distributing these.

This is not an unusual business model where suppliers focus on their core activities. A complexity in this particular structure was the need for information to flow between the airlines and travel agents about fare/seat availability and books. The Computer Reservation System (CRS) effectively provided this interface. Again this was initially a system that was developed by the airlines, but subsequently largely became an outsourcing activity as they divested their various systems to specific information providers.

The information interface between airlines and potential passengers was initially conducted by traditional travel agents that took the plethora of information available on the CRS systems and 'interpreted' it for their clients. After a very short time legal requirements meant that the computerized information bases that they worked with provided them with largely objective information and unbiased fares. Their interpretation of this information (the "halo effect") was partly influenced by their own skills and experience but also affected by the commission systems the airlines and the CRS vendors used to reward them. The situation was slightly complicated by the presence of consolidators, who, through access to blocks of low cost tickets, could via travel agents provide discounted options to travelers. Travel agents were not compelled to make customers aware of all possible options, nor were they aware of the ways agents received their remuneration.

Whilst the number of travel agents was large, and theoretically a potential flier could visit or contact a number to gain a wider cross section of 'interpretations', in practice the transactions costs of doing this were high. As a consequence any individual travel agent enjoyed a degree of local monopoly power. This fact, coupled with the structure of commissions that normally embodied a "base" commission (for all transactions) and an "override"[1] (offering a bonus or incentive if targets for a particular airline were met), meant that travel agents enjoyed high levels of profit in the 1980s.

The underlying market structure of the travel agency industry at that time was almost the classic textbook one of monopolistic competition. Basically there were many small and medium sized supplies, with some larger undertakings – that because of location and the difficulties of gather comparative information from several agents meant each had a degree of monopoly power. Both economic theory and empirical evidence from many different industries over the years argues that this type of situation leads to excess supply in the

[1] In effect the incentive structure was one that itself tended to favor larger carriers and was driven by incentives that were clearly not aimed at maximizing the benefits of the system to the consumer.

market. This is also a situation, however, where the suppliers themselves will not earn exceptional profits.[2] Consumers lose out in the sense that they pay the cost of having this excess capacity. The system is thus economically inefficient in terms of the resources that become tied up in it.

Basically, should any travel agent make a high return then, given the lack of significant barriers to market entry, newcomers will enter and the incumbent's profits will be eroded. Entry continues until returns are just sufficient to retain those in the market (a "normal profit" level).

The situation is not, however, the same as perfect competition (the benchmark of competitive efficiency in economics). This is because each travel agent, often because of location factors, is effectively offering a slightly different product to customers (usually in terms of ease of physically reaching the agent). Hence, although no excess profits (i.e., above those required to stay in the industry) are earned by the travel agents in the long run, the ease of using different travel agents varies allowing an excess capacity to develop. It is for this reason of excess capacity that regulations are often enacted to limit the number of supplying units where there is monopolistic competition – land use planning controls over retail outlets being perhaps the most pronounced case.

A number of factors have changed this situation of monopolistic competition. The advent of e-commerce provided a mechanism for the CRS vendors to circumvent the travel agents. Travel is, unlike clothing or food, something that is not immediately assessed by touch, smell, or taste and therefore the vital comparative and qualitative information about travel options are readily transferred electronically. The advent of the electronic ticket also removed the need for any physical contact with the vendor of the ticket or the high transaction costs of secure mailing.[3]

The CRSs therefore, saw an opportunity to internalized some of their business rather than outsource it to travel agents. They consequently provided on-line reservation and information systems. This effectively reduced some of their costs of providing information and transferred to them some of the profits from the travel agents. Consumers were effectively given another venue to gain information and to make reservations. It also offered a more effective form of competition between the vendors of travel services because accessing the various web-sites to make comparisons became much easier.

[2] The theoretical literature goes back to 1933 and the parallel work of Robinson in the UK (*The Economics of Imperfect Competition*) and Chamberlain in the US (*The Theory of Monopolistic Competition*).

[3] For these reasons there are also suited to electronic auctions, which have the further advantage to airlines of providing information about demand levels for their products.

The outcome of this was an initial stabilization of the number of traditional travel agents from the late 1980s and then a consolidation from the mid-1990s.[4] This, in fact is not an unusual trend in any industry. Initially, there are many suppliers with each often providing a slightly different service or located at a slightly different place. As maturity takes place, various economies of scale, scope and standardization emerge, and the greater managerial efficiency of some companies becomes apparent. The result is consolidation. This process is accelerated when a new competitive technology or structure emerges that puts pressure on the least efficient suppliers under the old regime.

The pattern is well documented throughout modern economic history. It is sometimes delayed or distorted by policy actions that retain for social or military reasons, or because of the political power of the suppliers, less efficient units (e.g., as is often the case in agriculture or with railroads where unproductive units are regularly subsidized). But in general, because such retention can be a significant cost elsewhere in the system, such actions have only been widespread in quasi-socialist societies.

A more recent shift has been the internalization of the information system by the airlines themselves – e.g., through the creation of Orbitz in the US and of Opodo in Europe. This has potential implications for the CRS vendors, the traditional travel agents and for direct sales by airlines. By its nature the introduction of a significant new player in the game, even in a long-term expanding sector such as air transport, has the potential to reduce the market share available for others. The problem becomes more serious for the incumbent suppliers if the new "product" is seen as superior to their product, or its supplier can manipulate, at least in the very short term, the market in its favor. From an economic perspective the issue is much more one of does the consumer ultimately gain from these changes.

The latter would seem to be the main issue confronting this Commission. Namely, does the consumer have efficient access to travel information at the present time? This is the issue that I will address here. I will make no significant comment on how "to improve the condition of travel agents, especially smaller travel agents". I have a sincere belief in market forces, rather than in the artificial institutional support of any particular sector or industry, or any groups within it by regulations or subsidy. In my view there have to be extraordinary reasons for "improving the conditions of travel agents, especially smaller travel agents". The tradition of the Anglo-Saxon approach to market intervention that underlies US policy is that it would have to be convincingly demonstrated that current methods of ticket distribution are not providing the types of service the public are willing to pay for.

[4] The American Society of Travel Agents provide data indication a fall in the number of travel agency firms from about 24,000 in 1994 to under 17,000 by 2001. The fall in travel agency locations has been slower revealing the consolidation that has taken place.

Ultimately, air travel is a derived demand provided to meet the need of those who wish to purchase it or to directly meet some social need (as reflected in the US's Essential Air services Program). Tinkering with particular links in the long vertical supply chain of air transportation supply to support a particular group for other than demonstrable efficiency reasons is unlikely to facilitate the efficient meeting of these ultimate needs.

The Airline Problem

There is an inevitable danger when looking at one particular feature of an industry or sector to treat it in isolation from the wider picture. The recent up-surge of electronic information/booking systems and the institutional structure surrounding them need to be set within the wider context of what is happening within the air transportation industry more broadly.

The airlines providing services in largely deregulated markets have not as a whole enjoyed large profits. Indeed, the return for US airlines is well below that for US industry as a whole[5] and over the trade cycle insufficient to recover the costs of capital. A feature also common to other similarly competition based air transportation markets such as that within the European Union.[6] While a few airlines have been able to make reasonable returns (Southwest is the oft cited example), the airline industry as a whole finds it difficult to recover what are often called their 'common' costs. These are costs that, in the context of scheduled airline services, have to be borne irrespective of whether the load factor/fare revenue combination covers them. In a highly competitive market, airlines are effectively forced to price down to their short-run costs to attract passengers and as a result find it difficult to recover these common costs.

Airlines may, however, be viewed as part of a larger value chain that embodies, amongst other actors, airframe manufacturers, airports, air traffic control, labor, fuel suppliers, and distribution systems. Whilst airlines have difficulty in recovering their total costs there is evidence that most of the other actors in the value chain make a reasonable return over the business cycle.[7] Recent events have changed this somewhat as the market has suffered a severe external shock. One of the problems with airlines is that they cannot use techniques widely applied elsewhere to recover their common costs.

Other industries with similar cost structure use a variety of mechanisms to recover common costs – telecommunications use two-part tariffs with an access fee and then a per use fee while other sectors enter

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[5] See annual data produced by the Air Transport Association.
[6] LM vanWilk, 'European aviation: towards a sustainable industry', to the European Aviation Club Brussels, June 20, 2002.
[7] At least based on pre September 11, 2001 data.

into long term contracts between suppliers and users. The airlines do not have these options but instead have sought to recover their common costs thorough dynamic differential pricing (the use of yield management techniques), the seeking of customer loyalty (the frequent flyer programs), and more integrated services (alliances). They have combined these with efforts to reduce the costs of their services. The outsourcing of distribution through intermediaries may be seen as an initial effort at enhancing efficiency, but with rapid technical change its internalization through both direct web sales and through structures such as Orbitz can also be viewed in terms of a revenue generation measure.

Most suppliers of any product have the freedom to sell through those channels that enable them to maximize their returns – in a sense this is a basic principle of market economics. It is not unusual for suppliers to change their outlet channels in the face of product changes, demand variations and with the advent of new distribution systems. The airlines have simply been doing what many other industries have always done. To limit this ability without exceptional reason is to assume that some form of regulation is more effective than the market. Alternatively, it is a normative act to convey some degree of protection on some other party, in this case travel agents. In doing taking such actions, however, new incentive measures come into play that can be the subject of capture and manipulation by various players, although they are seldom to the benefit of the customer.

Some Economics of Information Systems

Consumers require appropriate adequate information to make rational decisions – this is a basic tenant of economics. They need this information to enable them to make efficient trade-off between the options that confront them – indeed they need to have information about what these options are. Traditional economics talks about having "perfect information" but in doing this essentially assumes away the costs of gathering and processing the information – there is an assumption of zero transactions costs. In fact, information is costly to produce but cheap to reproduce. This can produce information overload. This means that once available, information is relatively easy to acquire. Indeed, in air transportation as in most other fields the words of the Nobel Prize winning economist Herbert Simon hold true, "a wealth of information creates a poverty of attention".

This is relevant for considering the role of travel agents. Their traditional function was one of sifting and sorting information. But today there are many alternative ways of gaining information and sorting can, to a large extent, be done automatically on a computer. Again, going back to the ideas of Simon, most people do not want all the information available but make decisions within a bound of rationality. Hence, if a potential traveler is seeking a cheap fare then looking beyond a low cost carrier such as Southwest may simply not be worth it, even if lower fares are actually available on other airlines. Members of frequent

flyer programs may not feel it worth going beyond either direct booking or going to the favored carriers home web page for a fare. Those with flexibility in their itinerary may oft for an auction style outlet like Priceline. Others may have complex itineraries, or want to combine a flight with related purchases such car hire or hotel room that requires some professional guidance. The boundaries in this case are wider and travel agents act as consolidators of information. The costs in time and money of making a poor decision justify seeking this information.

The crucial point is that these boundaries differ for types of customer making it extremely difficult to draw up any form of regulatory structure that meets all needs or conforms to the characteristics of all types of supply. It seems almost inevitable that many forms of strong regulatory control would limit the choice of some groups, or would build in excessive regulations over those types of service that currently are sought for the very reason that they are cheap and simple. Regulation is by its nature best suited to situations where the product is simple and the subjective functions of potential purchaser are fairly uniform. This is not the case with airline ticket distribution.

What is perhaps important is that there be a high degree of transparency in the system. The use of override payments to travel agents (and the demise of basic commission) clearly does not give the incentive for a travel agent to be objective. I would judge the majority of the public is unaware of this. Information of self-interest would seem desirable. This is really independent of any fees travel agents charge their clients and is simply good practice.

Conclusions

There are many distribution channels for airline tickets that are continually being added to. At any point of time technology and circumstance will tend to lead to one being preferred by customers to another. The day of the paper ticket and the needed to have some form of interpretation of data favored the travel agent, and allowed each to enjoy a degree of local spatial monopoly. Their numbers would not have grown so rapidly in the 1980s had this not been so. E-commerce initially favored the CRS systems although the airlines also made use of electronic auctions such as Priceline.

The high profitability of these sectors stemming partly from the fees levied, provided an incentive for at least some of the carriers to offer their own distribution systems. The important issue is whether these new channels provide a more efficient service to customers in terms of the fares/service combinations that they can access. They still constitute a relatively small part of the market, although a growing one. The relative shift in business in itself reveals a consumer preference. The issue is, therefore, whether this is a situation that could be exploited by the airlines or whether it is rather a transfer of resources in the market that is

leading to a genuine long term gain for consumers, or whether it is a prelude to their exploitation. *Ex ante* this is impossible to judge.

What one can perhaps say from experience is that with information systems there is considerable fluidity in their application. When there are any significant profits being earned, new market entrants emerge, or existing ones transmogrify, to offer similar services to customers at lower prices. The alternative of government action is thwart with dangers. Certainly, if there is a demonstrable long term adverse effects on consumers of any system (in other words there are significant market failures) them intervention may be deemed necessary. The danger is that intervention in the airline ticket distribution system could well lead to a return of full regulation of the industry and the inflexibility and higher fares of the pre-1978 era. Government failure may be worse than market failure. What one should seek is a situation of "workable competition", which essentially means an acceptance of an imperfectly function market that interventions would only make worse. At present that seems to be what exists, but time change and periodic reviews would seem important.