



# **Critical Aspects of the Tourism-Transport Relationship**

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# 1. Introduction

The interconnectedness between transport and tourism remains perhaps one of the more important relationships within the wider tourism system. A fundamental fact is that people travel in varying distances by various means for a variety of reasons, and transport provision sits at the heart of that movement. Transport is important for tourism because it a) facilitates the movement of tourists between their place of origin and their destinations, and b) acts as the means of movement within a destination, thus allowing for wider dispersal of visitor movement and, as a result, maximum exposure of visitor flows to areas perhaps not otherwise possible (Page 2009).

Transport for the purposes of tourism can be expressed as a series of modes operating across vast networks consisting of points (or nodes) and routes (or vectors). Modes of transport can include air, water and land (road and rail), and various types of transport provision within these modes are possible. The networks through which modes of transport operate function as important economic conduits for many destinations (Duval 2007). Networks can, of course, be global, such that the movement of tourists (as passengers, for example, on an international airline) constitutes one of the more common means of international visitor arrivals. Networks can also function on a regional level, with the European Community offering an excellent example of removal of political and economic barriers to inter-State, regional travel. Finally, local networks, or those networks of transport that operate within a wider destination such as a country, are critical in ensuring that the economic benefits of tourism are not simply concentrated in one particular locality. Critically, it is important that local networks are integrated into regional and international networks in order to maximise visitor flows into a destination. As a result, transport can often be the single most important factor in determining the viability of a destination's tourism sector. This is especially the case when the destination happens to be geographically remote and thus highly dependent upon, for example, international air services. In these cases, governments in these destinations will naturally wish to ensure that access is maintained.

Duval (2007) argued that there is a natural 'blurriness' that features when examining the linkages between transport and tourism. First, it is apparent that transport can be both a mode of travel and a destination; large cruise ships are perhaps the most obvious example of this. Second, the segmentation of transport use into tourism and non-tourism is difficult, but not necessarily impossible, for transport planners. Airlines, for example, will only initiate (or expand) services between two points if at least one segment shows signs of robust growth. Finally, a more pertinent question becomes one akin to the classic question of the chicken and the egg: which arguably must come first – the provision for transport services to and from a destination or the quality, scale and scope of attractions and activities that appeal to certain tourist market segments? The answer to this question is elusive as there is a strong sense of co-dependence between the two sectors, which is to be expected. Transport relies on the viability and attractiveness of a destination, and a destination relies on transport for visitor access. The underlying strategic perspective of this relationship is manifested in determining whether either (or both) are responsible for ensuring tourist flows are maintained.

The two most critical facets that influence successful transport-tourism relationships are accessibility and connectivity (Duval 2007, Page 2009). Understanding the degree of accessibility

and connectivity of a destination is important because it helps establish the role of both government and private firms in the movement of tourists. Accessibility is simply a geographic comparative measure of various points within a network and the connections that are possible given existing transport provision. Connectivity is a similar measure, but examines the practical and technological constraints and opportunities for increased accessibility (e.g., shorter travel time or more efficient means of transport).

A critical question at this juncture is what role government plays in the provision of transport for tourism. As tourism is largely seen as a public good and thus the benefits can often extend deep into an economy, there are strong arguments to support the heavy involvement of national or local governments in ensuring the accessibility is maintained through efficient and attractive tourism-related transport. This involvement can range from direct subsidisation to active ownership and control of services. On the other hand, the involvement of government can actively distort the market from operating freely and profitably. Thus, where government involvement is heavy in transport provision, the logical question to ask is whether that involvement constrains private operators who may offer cheaper and more efficient services to tourist key markets.

Our intent with this review is to highlight some of the more salient aspects of the tourism-transport relationship. Throughout, we utilise real cases and situations to demonstrate the complexity and importance of transport to tourism development. While throughout the main part of the review we focus on issues directly related to transport and tourism, it is worth acknowledging transport provision and its terminals contribute to environmental impacts such as noise, waste, atmospheric pollution, accidents and congestion (Abeyratne, 1999; Milan, 1999; Wheatcroft, 1991), they are also blamed by what is happening in terms of climate change (Gössling and Upham, 2009). Hence, a case study on transport greenhouse gas emissions, particularly in reference to air transport, is presented at the end of this review, with some implications for tourism discussed.

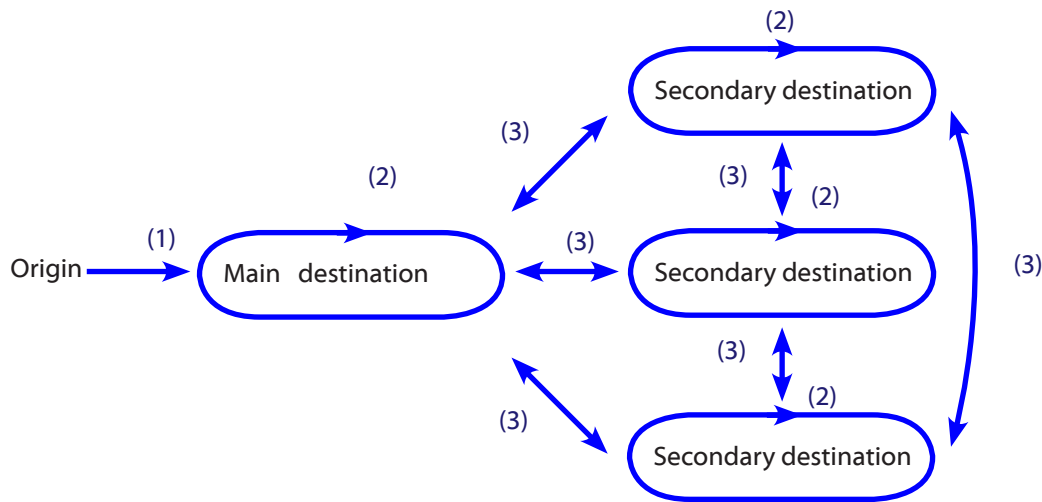
## 2. The tourism-transport interface: symbiotic relationships

The intrinsic relationship between transport and tourism can be considered from two major approaches: from the tourism perspective and from the transport perspective.

The World Tourism Organisation defines tourists (WTO, 1995: p.1) as 'people who are travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited'. From this definition it is possible to highlight that tourism will only happen when people leave their usual environment, also known as their 'place of origin' or simply 'origin', making a displacement to another place, which is not part of their usual environment (work, school etc), also called a "tourist destination" or simply a 'destination'.

Apart from linking the origin to the destination, means of transport are also required in order to provide accessibility within a certain destination (from the airport to the hotel, from the hotel to a tourist attraction etc), and in the case of a multiple destination trip, to link the various destinations within the trip. The scheme on Figure 1 illustrates the participation of transport

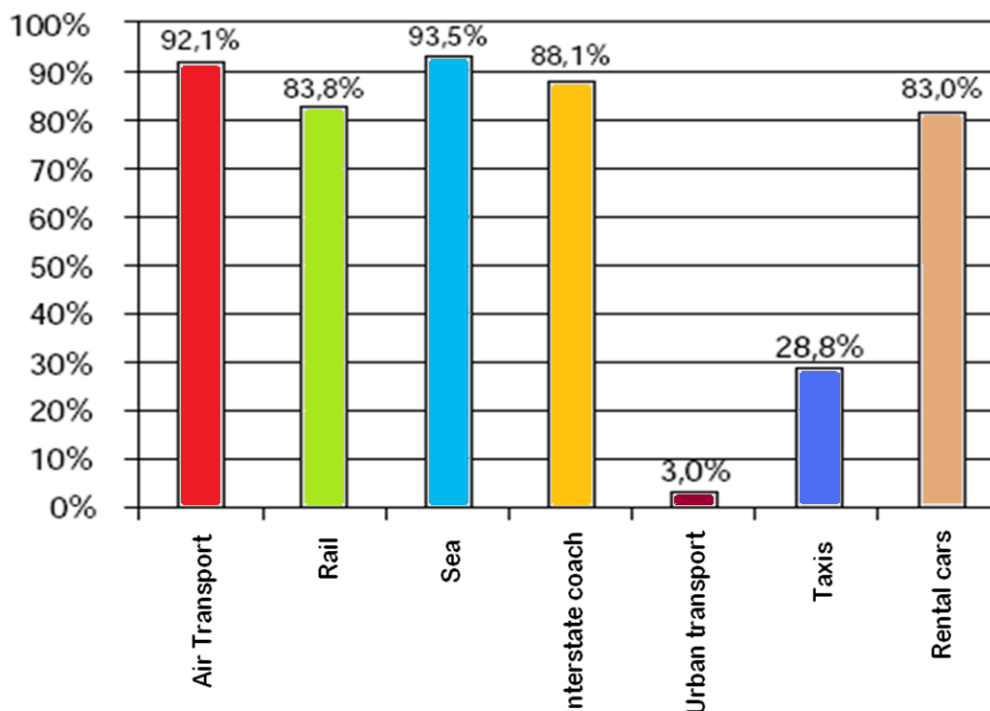
(1) between the origin and the destination, (2) within the various destinations visited, and (3) between the different destinations visited during a holiday trip.



**Figure 1:** Transport linking to, from and within destinations.

Another way to understand the importance of transport to tourism is analysing how the introduction of a new transport technology has impacted on tourism development. There are several examples such as the railway development in the UK in the 19th century and the flourishing of seaside resorts, the increase of mass tourism within the USA and Europe after cars became more affordable in the 1930s and the boom of international tourism in the 1960s, with the introduction of jet planes (Boeing 707) and, in the 1970s, with the arrival of wide-body jets (Boeing 747), sending tourists to all corners of the world (Palhares, 2003).

From the perspective of the transport activity, tourism is a vital part of many regional and long haul transport providers. A study conducted in Canada shows that while tourists count for only 3% of urban passengers that use urban transport or nearly 30% of taxi passengers, air, sea, rail and rental car companies have at least 80% of tourists among their clientele (see Figure 2).



**Figure 2:** The participation of tourists in different modes of transport (adapted from Lapierre and Hayes, 1994)

Transport operation per se also provides some characteristics and attributes that are relevant to tourists and the study of tourism. Some of them are presented and briefly described on Table 1.

**Table 1:** Operational attributes of transport systems.

Attribute	Description
Comfort	Measured in many different ways, including the pitch of the seats, noise, quality of the waiting area etc.
Confiability	Ability to accomplish the contract (e.g. punctuality).
Domestic or international	Whether or not the trip involves more than one country. In most cases, international trips require more complicated arrangements to comply with the procedures of two different countries, such as immigration issues and regulations related to the provision of transport services (bilateral agreements).
Elements	<p><b>Power:</b> defines the mode of transport and in most instances the speed travelled</p> <p><b>Terminal:</b> place of change from one mode of transport to another</p> <p><b>Vehicle:</b> the carrying unit where passengers and goods will be accommodated.</p> <p><b>Way:</b> divided in natural (e.g. sea and air) or artificial (e.g. railways and highways). In some cases the vehicle is subject to traffic control.</p>
Fare	The transportation charge that can be a flat rate for any seat available or be calculated by complicated pricing strategies including revenue management where, for example, passengers flying the same flight in the same class pay completely different prices depending on how far in advanced they have booked, restrictions imposed on cancellation, length of stay in the destination (e.g. passengers staying a Saturday night are charged less as they are more likely to be on a leisure trip rather than a business traveller) etc.
Intermodality	<p>The ability to connect two or more different modes of transport. Intermodal connections exist in different ways:</p> <p><b>Physical:</b> where a terminal integrates two or more modes of transport in a way to provide passengers with the best technology to access the terminal and reach their final destination.</p> <p><b>Fare:</b> where the same fare covers two or more modes of transport (e.g. limousine offered by some airlines for passengers flying business and first classes)</p> <p><b>Operational:</b> where, for example, the timetables of two different modes of transport are coordinated to minimize connecting times.</p> <p><b>Institutional:</b> when the same organization operates two or more interconnected modes of transport.</p>
Mode	<p><b>Air:</b> it is the fastest mode of transport, linking most parts of the world.</p> <p><b>Rail:</b> dedicated ways make it a reliable and safe mode of transport, usually with a high level of comfort. High speed trains are becoming competitive with airplanes, particularly for short and medium trips (less than 1,000km)</p> <p><b>Road:</b> provides the convenience of door to door transport</p> <p><b>Water:</b> it is the slower mode of transport, but it can provide high level of comfort and amenities onboard while carrying a large number of passengers (e.g. cruise ships).</p>
Public or private	<p>Public transport is a shared passenger transport system that can be operated and owned either by a private or public company. It is available to any member of the public, usually paying a fare to access it. Most public transport runs to a scheduled timetable.</p> <p>Private transport is the one the driver or the hirer has control over who is taken onboard and the route and destinations travelled to.</p>
Schedule or charter	Schedule transport follows a timetable and it is required to offer the service regardless of the number of passengers onboard. Charters are usually arranged with a particular customer, not having to follow a given timetable or itinerary. The term charter flight has acquired a more specific meaning, as it can be linked to holidaymakers who are buying a flight as part of a holiday package (in some cases flying a schedule flight, but buying the ticket from the tour operator, not the airline).
Security	It is related to a few variables, including safety issues (e.g. the number of accidents or fatalities), robbery etc.
Speed	How fast a certain technology travels.

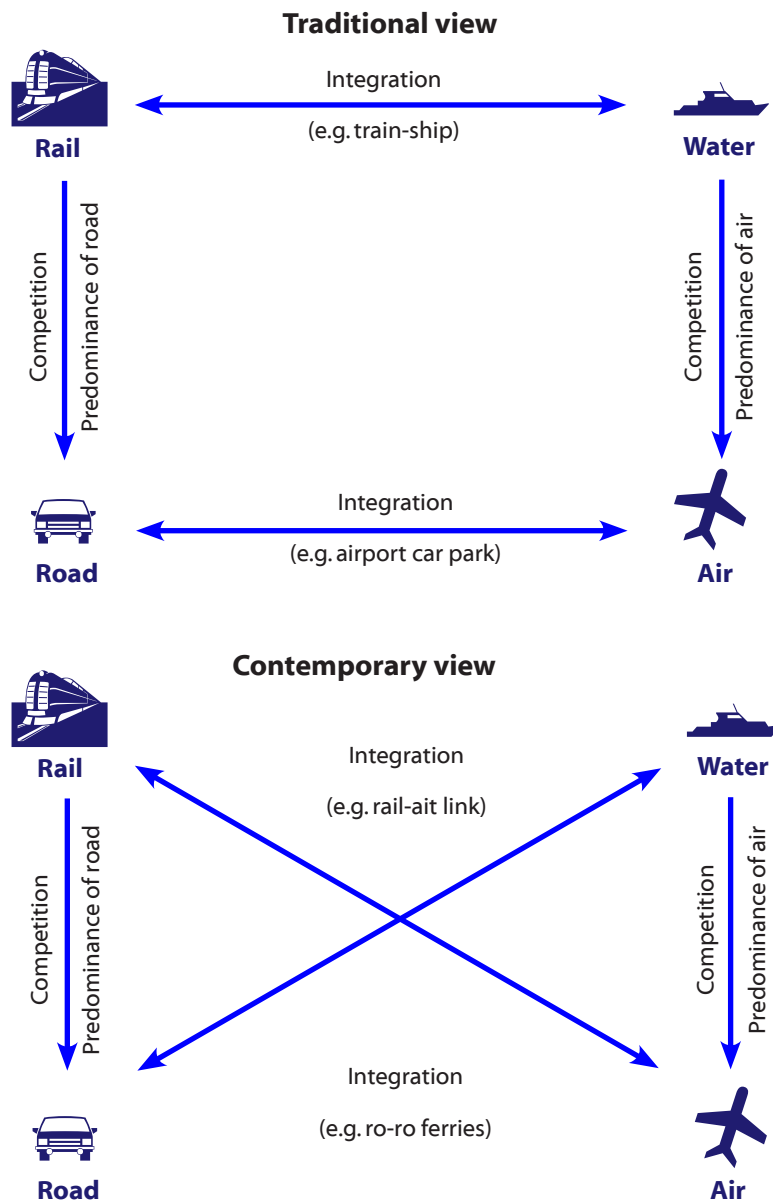
While it is not the purpose of this review to discuss each of the attributes described on Table 1, intermodality is a topic that deserves further development. The main reason for this is that while the next section presents and describes each of the four modes of transport, this is done in an independent way with most of the focus being on their individual issues, not how they compete and integrate with each other. Another reason for the importance of intermodality is that, in recent years, technology improvement has changed the way different modes of transport integrate with each other. Stubbs and Jegede (1998) suggest that traditionally there has been some competition between road and rail modes, with the preponderance of the latter. Cars are popular because they provide the convenience of private door-to-door transportation without the need to stick with a timetable. In many parts of the world it is clear the decline of the importance of long haul rail passenger transportation, including large countries such as Australia, Brazil and the USA.

A similar competition also exist between air and sea transport. Passenger sea transport has never been the same after the introduction of jet planes, as they are much faster and cheaper to travel across the world than sea transport. Since then sea transport as only succeed in the cruise segment.



**Figure 3:** The fast ferry catamaran, The Lynx, which use to operate across the Cook Strait in New Zealand. Above, the ship at port ready to embark cars.

Traditionally, integration has been strong between rail and water transport, as most railways serve large ports particularly to transport goods and freight, which benefits passengers as well. Road and air are also heavily linked to each other, as many air passengers tend to use their own car or taxis to reach or leave an airport. In recent years, however, while the competition among road-rail and air-sea still exists, new possibilities for integration have emerged. Stubbs and Jegede (1998) give as examples the rail-air integration, particularly as a means to connect Central Business Districts to large airports in a faster and more reliable way considering the increase of traffic jams in large metropolis around the world. The integration between road and water transport is possible through the new fast ferry catamaran technology. Roll-on roll-off ferries are able to transport vehicles and passengers and are used in different parts of the world, particularly in Europe and Oceania. New fast ferry catamarans have, in some cases, tripled the speed travelled by traditional ferries and creating new markets for travelers willing to bring their own car on their trips (see photos on Figure 3). The traditional and contemporary views of transport integration and competition proposed by Stubbs and Jegede (1998) are presented in Figure 4.



**Figure 4:** Stubbs and Jegede's views of traditional and contemporary transport integration and competition (adapted from Stubbs and Jegede, 1998).



Another relevant aspect of the tourism-transport relationship that deserves some attention are the transport networks. While in the introduction a general overview of transport networks was presented, in order to better understand some of the issues presented in this review, a more detailed explanation is required. Particularly important is to understand the role and functions that the nodes have in a transport network, as they are the focus point of most tourist activities. Nodes can have several functions, including being the origin of a trip or the tourist destination, as previously discussed at the beginning of this review. However, other nodal functions are also possible as presented by Lohmann and Pearce (2010):

- ◆ **Gateways:** in a general sense are seen as major entry/exit points into or out of a national or regional system (Pearce, 2001c). Gateways not only link other nodes within a national or regional network – see the example of nodes C and E on Figure 5 – but also serve to link one network to another (Burghardt, 1971). Several writers have considered the gateway or portal function of communities adjacent to national parks (Mules, 2005), while for others, gateway cities are synonymous with large metropolitan centres (Bowen, 2000).
- ◆ **Hubs:** traditionally used in a fairly general sense to mean a place which functions as a crossroads or any large airport or airline operating base, the concept of hubs has come to assume a more technical meaning as the result of changes in airline practices and relates to their transfer functions within a wider network (Dennis, 1994). O’Kelly and Miller (1994: p.31) define a hub as ‘a major sorting or switching centre in a many-to-many distribution system... the key idea is that the flow between a set of origin–destination cities passes through one or more hubs en route to the final destination’. Fleming and Hayuth (1994) use the terms centrality and intermediacy as spatial qualities that enhance the traffic levels of transportation hubs, and hence indicate that they are places strategically located within transportation systems (see Figure 5).
- ◆ **Stopovers:** the concept of stopovers is less developed than the other functions and derives from analyses of touring or circuit travel. As the name suggests, stopovers refer to places which serve as way points between destinations or function as secondary destinations on longer circuits (Pearce and Elliott, 1983).
- ◆ **Multiple functions:** other terms are one indication that places may have multiple functions. Caves and Gosling (1999), for instance, use the term ‘gateway hubs’ to refer to gateways on the periphery of Europe which provide onward services to secondary centres. In his model of urban tourism spaces, Pearce (1981) explicitly incorporated the idea that larger urban centres in particular may have multiple nodal functions due to their size, infrastructure and place in the urban hierarchy. He later developed the practical implications of multiple nodal functions with regard to tourism planning (Pearce, 1995).

Gateways and hubs in particular are in a position to attract connecting passengers to visit and discover the destination features they have to offer. Section 3.1 provides the example of Singapore and Dubai and how a well-orchestrated strategy was implemented in order to create world-class destinations (Lohmann *et al.*, 2009). One example of the potential for gateways to improve their destination aspects is presented by Lohmann and Pearce (2010) as the result of a research undertaken with Cook Strait ferry passengers and their likelihood of those passengers to become tourists for the gateway ferry ports of Wellington (North Island) and Picton (South Islands). Their major findings include the preference among international tourists to have a

stopover in Wellington, more than in Picton, if they were offered either more information about these two locations, as well as a deal that would include the ferry ride and an accommodation in one of these two locations.

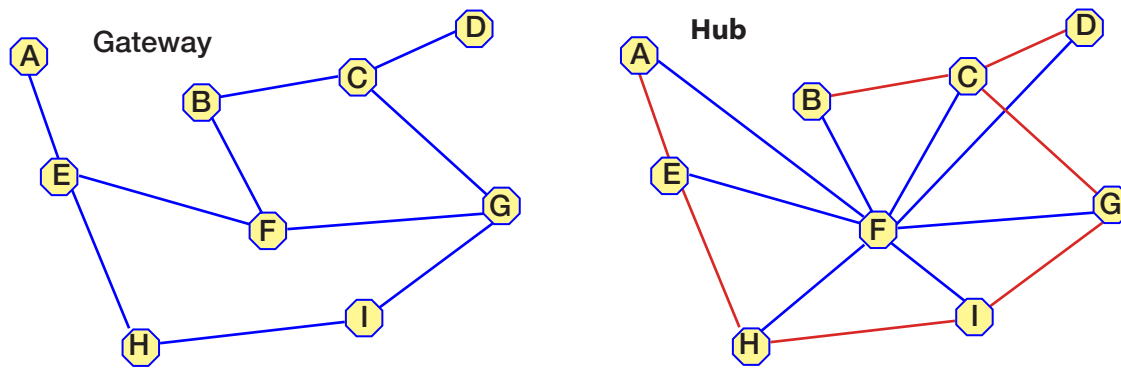


Figure 5: Theoretical examples of networks showing gateway (left) and hub (right) functions.

### 3. Modes of transport and tourism

While international and domestic tourism functions as one of the more pervasive leisure activities worldwide, it both relies and drives transport provisions at a variety of levels. As the previous section has outlined, there exists a fundamental synergy between tourism and transport, but quite often the ability to pull apart the use of transport for the purposes of tourism can be difficult. Not only does this make planning and development difficult, but it also renders micro focus on the key aspects of the relationship between the two problematic.

Nonetheless, there are some obvious (and not-so-obvious) examples that illustrate the inherent importance of transport in the provision of tourism. We have elected to dissect the broad sector of transport into the sub-sectors of air, water and ground-based transport. Each of these has particular characteristics to tourism from a development and impact perspective, yet each has the common purpose of serving the need of moving tourists through a variety of scales, including between origin and destination, inter-destinations (where appropriate) and intra-destination.

#### 3.1 Air transport: shrinking the world and developing mass tourism

In terms of the individual modes of transport, aviation is probably the most studied facet of tourism transport and often reaches top of mind when one considers transport in the context of tourism. One explanation for this phenomena can be attributed to the growth of airline networks and airport infrastructure, the decrease of the real costs of air travel and the increase of capacity and speed, which have all contributed to the development of the international tourism industry over the last decades (Palhares, 2002; Sypher:Mueller International Inc, 1990). In addition, airlines' ongoing contribution to tourism expansion goes far beyond providing the essential transportation links.

Beginning in the 1970s and 1980s and continuing to a certain degree up to this day, vertical integration and 'bundling' packages with accommodation and tour operating sectors as well as other tourism-related activities, such as restaurants and rental cars, was a reality within the aviation industry (Lafferty and Fossen, 2001; Pyle, 1985). One current example is Emirates Air-

lines, which is part of a larger corporate group that embraces various tourism activities, including a travel management company, hotels and resorts, a tour operator and attraction providers (Lohmann *et al.*, 2009). While the wider packaging of tourist experiences is still a feature of some carriers' business plans, their own operations reflect an increasing trend of outsourcing. In fact, it is very common for some carriers to outsource and sub-contract even core parts of their operations, including aircraft maintenance, aircraft leasing, computer reservation systems technology and in-flight catering (Debbage and Alkaabi, 2008).

In the past, airlines have also actively contributed to the promotion of destinations. One can clearly identify through television ads (many of which are available on YouTube) produced by airlines in the 1980s. Airlines have an interest in selling destinations in order to achieve profitable load factors (or, more properly, seat factors) on specific routes. In this sense, airlines and national destination marketing organisations (DMOs) have similar goals and objectives, with both exerting some influence on the activities of the other. Airlines, for instance, may exert pressure on DMOs to increase marketing efforts in a particular source market in order to drive traffic. DMOs may try to exert pressure on airlines to increase frequency of service from a particular destination in recognition of latent demand that is not being unmet. Importantly, the decision to fly a particular route by an airline is almost entirely based in economics, namely the ability to achieve a stream of revenue that exceed costs (although in a strict sense, there may be strategic reason to offer a particular origin-destination sector at a loss in order to secure traffic flows across a wider network – see Holloway 2003 for more on airline economics). In some cases, though, political pressures can make an airline to open a new route, particularly when this is aligned by the desire of the national or state government to strength trade with another place. One of many examples is the recent decision of Etihad to establish a flight between Abu Dhabi (UAE) and Astana, the capital city of Kazakhstan.

As a means of driving traffic and increasing seat factors, airlines compete not only on the basis of the destinations that they serve, but also on the product/service that they offer. With the increase in competition and the slow but gradual emphasis on deregulation and liberalisation of access, airlines start to differentiate themselves in terms of the product they offer, i.e. the pitch of the seats, the level of service and entertainment provided on board, modern fleet etc. What is more, with the consolidation that is happening in many parts of the world, particularly in Europe, air carriers do not operate from just their home country. A good example is the recent mergers undertaken by Lufthansa (including SWISS in 2005, Brussels Airlines in 2008, and Austrian Airlines in 2009) and British Airways with Iberia (April 2010).

It is critical to point out, then, that the tourist experience can often be very much informed by the nature of the product and service on offer by an airline. One example of this is the concept created by Singapore Airlines in the 1970s, where female air stewards, also known as Singapore Girls, will embrace and introduce the country's hospitality on board their aircrafts. Hence, the tourist experience can start already during the travel, not necessarily after arriving at the destination. Given that a significant proportion of international long-haul travel by tourists takes place via air, this is not an insignificant consideration in assessing the critical function of airlines.

Perhaps the most studied aspect of the relationship between aviation and tourism is deregulation (Shaw, 1982; Wheatcroft, 1994). As surprising as this may seem to some, the reality is that some countries regulate competition, accessibility and capacity of airlines to operate to their airports. As noted above, there has been an increased push toward the removal of

these barriers (see for example, IATA's Agenda for Freedom – [www.agenda-for-freedom.aero](http://www.agenda-for-freedom.aero)). One argument for their removal is that tourism benefits as the ability of passengers to fly to a destination increases, providing opportunities for the tourist sector to grow. This has happened in different countries and regions, such as the US in 1978 (Shaw, 1982), the EU liberalisation process during the 1980s and 1990s (Simons, 1992; Subrémon, 2000) and that of Pacific countries in the mid-1980s (Boberg and Choy, 1988; Kissling, 1998). The importance of air access is particularly high for geographically remote destinations. In fact, many islands and isolated parts of the world rely particularly on tourism for their economic survival (Grech, 2000; Kissling, 1998a; Turton and Mutambirwa, 1996) and air transport is to many destinations the predominant means of transportation (e.g. Hawaii, Australia and New Zealand).

### 3.1.1 Tourism development and low-cost carriers

Recently, growth in short-haul tourism in some instances has been amplified by the introduction of services from so-called 'low-cost carriers' (low-cost carriers), by either grabbing market share away from incumbent 'network' carriers or by growing origin-destination markets through the introduction of new services. Well-established and focused low-cost carrier have a strong power to negotiate access and privileges to new destinations and airports as they usually increase the traffic generated making passengers swift from other modes of transport to airplanes. Southwest Airlines (SWA), Ryanair and easyJet are excellent examples of successful and profitable airlines. In January 2010, for example, Southwest Airlines had its 37th consecutive profitable year.

For nearly forty years, Southwest Airlines has only flown domestically in the US, carefully deciding which airports they would operate. In December 2009, Southwest Airlines only served 68 cities (in comparison to over 200 from American Airlines) in 35 different US states. Southwest Airlines by no means is a small airline as it has the biggest fleet of Boeing 737 models in the world (over 530!)<sup>1</sup>, being the second largest airline in the world in terms of passenger-kilometre flown (118,272 millions). Proportionally they serve fewer destinations than most major US airlines, but once they start a new route they offer a high number of frequencies. In addition, as some people say, "wherever Southwest goes, lower airfares follow" as competitors are forced to reduce their prices and the size of the market increases as it becomes more affordable to travel. Hence, Southwest Airlines is a desired airline for any airport and destination in the US. The text below, extracted from the Mobile's (Alabama) airport website ([http://www.mobairport.com/news\\_faq.html](http://www.mobairport.com/news_faq.html)), reflects the struggles that many airports go through in order to attract SWA:

#### Is there something Mobile can do to convince Southwest Airlines to serve Mobile?

Southwest makes decisions as they fit into the airline's strategy, and there is little a community can do to attract short of keeping them abreast of an expansive and growing economy. [...] That number of flights requires ~ 750,000 potential passengers in a new market. The Mobile market currently has 600,000 total passengers. However, we have worked closely with Southwest for 10 years and, hopefully, one day they may change their business model to fit cities Mobile's size. In fact, Southwest has been to Mobile to speak to our Air Service Task Force. Their message was clear – there are things that can be done now to help improve our business case for Southwest service – support competition (fly on all Mobile carriers) and fly from your local airport. If they ever begin serving smaller markets like Mobile, we hope to be one of the first.

<sup>1</sup> [www.southwest.com/about\\_swa/press/factsheet.html](http://www.southwest.com/about_swa/press/factsheet.html)

Short-haul services provided by low-cost carriers might help establish or enhance visitor flows, but these services are not without controversy. For one, there is considerable tension over the ability of low-cost carriers to almost pick and chose airports to service. This can mean airports (often government owned) may be willing to forgo particular revenues from aeronautical charges (e.g., landing aircraft) in order to appear attractive. As airlines effectively operate mobile capital, as opposed to airports, which are fixed, they can strategically position aircraft almost anywhere in a catchment area that is limited only by the range of the aircraft itself. As well, some low-cost carriers continually come under media attention regarding what some consider to be insufficient efforts at providing customer service. It has to be said, however, that the success of low-cost carriers in some markets (particularly Europe), cost appears to be a key driver, so much so that fringe service options on short-haul flights may not always be critical in securing market share.

Finally, it is also worth mentioning that for many travellers the lower fares offered by low-cost carrier provide them with an opportunity to escape their routines and spend some time in another place. When airlines such as Ryanair offer £5 airfares on their website, the destination is often what least matter least for potential travellers living in the UK. Most of them just want a break, preferably to a warmer weather. That is when destinations served by low-cost carrier really benefits, as passenger traffic will be enhanced, with tourists spending money while visiting these destinations. In this sense, price is driving the market irrespective of the destination

### 3.1.2 Premium long haul airlines and destination development <sup>2</sup>

Despite the general success of the low-cost carrier business model in many countries/regions worldwide, long-haul operational models still feature and can generally be profitable (negative and uncontrollable externalities notwithstanding). Long-haul operations clearly provide the fastest and most efficient way for a destination to tap into a distant source market. Two interesting examples of destination development linked to air transportation are Singapore and Dubai. They combine a well-orchestrated initiative involving airlines, airports, tourism marketing and government actions to convert passing through passengers into tourists. The transport network created by both Singapore Airlines (SQ) and Emirates (EK) made Changi and Dubai airports respectively key hubs between the Western and Eastern parts of the globe. With a small local market from where to attract passengers, Singapore with approximately 4.5 million inhabitants and Dubai with 1.4 million people, these two airlines went to other places to generate the traffic they need to make their operations viable.

Singapore Airlines provides a premier service to long haul passengers, serving almost 100 destinations around the world. It operates over a third of all flights at Changi airport, with the carrier being the sole operator on several routes to and from its home base. Changi is a world-class airport providing a wide range of services to passengers (special recreation zones, including themed gardens and a swimming pool, duty free shops, free sightseeing tours for passengers with at least a five-hour overlap connection etc) and airlines (maintenance hangars and catering facilities). Singapore as a destination offers many outdoors attractions such as the Botanical Gardens, Jurong Bird and Reptile Parks, Singapore Night Zoo, Bukit Timah Reserves, Orchid Gardens and Sentosa, the Island of Tranquility. It is also the number one MICE (Meeting,

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<sup>2</sup> Based on Lohmann, G., Albers, S., Koch, B., Pavlovich, K. 2009 From hub to tourist destination – An explorative study of Singapore and Dubai's aviation-based transformation. *Journal of Air Transport Management*, 15, 205-211.

Incentive, Conference and Exhibition) destination in Asia and the 6th worldwide. Another developed feature to attract tourists is the promotion of Singapore as a low-cost 'shoppers' paradise', particularly in terms of high tech products, fashion, jewellery and watches.

Emirates is one of the few airlines in the world to fly to all continents, taking advantage of Dubai's well-positioned location for Europe-Asia travel (about 3.5 billion people live within an 8-hour flying radius of Dubai). It has a strong presence in Australia and New Zealand, Europe, Asia and Africa. More recently has also opened up routes to North and South America. Emirates makes use of several successful operational and managerial strategies including (Lohmann *et al.*, 2009):

- ◆ lower labour costs due to the use of expatriate workers from low wage countries;
- ◆ outsourcing of accounting and IT tasks to India and Pakistan companies;
- ◆ bulk orders of aircraft from Airbus and Boeing to achieve volume discounts;
- ◆ entering a new destination market offering at least one daily flight, and through increased demand builds up the route with larger aircrafts and then higher frequencies.

It seems that the strategy set up by Singapore to develop its destination, making use of a well-established air transport network, has been successfully imitated by Dubai. It is possible to argue that the integration and governance of the airlines, airports and tourism organizations was only possible in both locations due to their governments ruling a consistent and long-term oriented investment and development strategy (Henderson, 2006; Lohmann *et al.*, 2009). Many companies operating at Changi or Dubai airports are subsidiaries of corporate groups that include their respective airlines. This is an example of vertical integration at the operational level. In addition they also have strong links with tourism organisations to develop enticements for stopovers; e.g. airfares that also include two or three night accommodation for minor additional expenditure. Emirates has even more consolidation through owning hotels, adventure travel agencies and tourism attractions.

### 3.2 Cruise tourism and ferries: the new reality for water passenger transport

Although water transport has lost some of its appeal for travellers, particularly during the 1970s when ocean liners were substituted by wide-body jets as the main long-haul transport of choice, currently cruise ships and, in a certain degree, new fast ferries technologies are the most popular means of transport used by tourist. In fact, cruise tourism is considered one of the fastest growing sectors of the travel industry, with an average increase of 10% per year in the last 30 years (Tourism New South Wales).

The cruise industry is a substantial component of international tourism and operates as a unique and complex transport industry (Cartwright and Baird, 1999; Dickison and Vladimir, 1997; Douglas and Douglas, 2001, 2004a). Not entirely unlike air access, global cruise tourism is pervasive in most regions, including Africa (Irando, 2004), the Asia Pacific (Douglas and Douglas, 2004b; Singh, 1999, 2000), Australia (Dwyer *et al.*, 2004; Dwyer and Forsyth, 1996), the Caribbean (Johnson, 2006; Showalter, 1994; Wilkinson, 1999), Europe (Gibson and Bentley, 2006; Marusic *et al.*, 2009), Latin America (Seidl *et al.*, 2007) and the USA (Hobson, 1993a; Hobson, 1993b; Mak, 2008; Marti, 2007). The supply side of cruise tourism (Biehn, 2006; Gibson, 2008; Testa, 2004; Thompson, 2004) incorporates concepts of cruise firm management, such as route planning, capacity, operations management and planning, while the parameters of cruise demand focus

on understanding passengers' behaviour and motivations for cruise travel (Kwortnik, 2008; Miller and Grazer, 2003; Yarnal, 2004).

Of special interest to many tourist destinations is the ability to compete and attract new cruise ships. Although well-established destinations such as the Caribbean, Europe/ the Mediterranean and Alaska – respectively the top three in the world accounting for over two-thirds of the industry capacity in 2002 (Douglas and Douglas, 2004a), have a competitive advantage considering their proximity to US and Europe, the two major markets. That said, more and more destinations are positioning themselves to receive cruise ships, particularly in the Asia Pacific where the increases in cruise berths in recent years point potentially to a robust future (Report-Linker, 2010).

Like aircraft, and from an accounting perspective, cruise ships are floating assets that can be relocated from one place to another, even though usually itinerary planning will be established at least a couple of years in advance. This provides cruise lines the opportunity to try new destinations without necessarily committing themselves in the long run. Brazil, for example, is a destination where there has been a significant grow in terms of both the supply and demand for cruise tourism. Until 1995, the country's constitution prohibited cabotage – the transport of domestic passengers by a foreign transport operator – unless the ship was leased to a national company that should employ part of the crew the locals. With the change in the legislation, more and more cruise lines became interested in relocating their fleet to explore the vast Brazilian coast, predominantly during the summer season in the Southern hemisphere when ships were more available as a consequence of the off-peak season in the Northern hemisphere. In 2009, over 500,000 passengers (90% of them domestic tourists) undertook a cruise in Brazil, particularly due to the air transport crises that lasted for several months when travellers become scared of flying, opting for a cruise vacation (Costa *et al.*, 2010).

Usually ports provide different roles for cruise ship operations as described below (Thompson Clarke Shipping, 2006):

- ◆ **Ports of call or destination ports:** a port where passengers will spend a few hours or eventually one night visiting the local attractions. No new passengers are brought on board. It provides basic facilities for the cruise ship, such as jetty and berth or anchorage, and for the passengers, reception, transport and activities (shore excursions);
- ◆ **Ports of embarkation/disembarkation or turnaround ports:** provides the attributes of the previous type of port in addition to pick up and drop off passengers and supplies. Good accommodation and transport infrastructure is usually required for cruise guests. The port terminal needs a large space area for assembling check-in and checkout passengers and luggage, as well as the required customs and immigration agencies. Usually new supplies of food and goods will be brought on board with waste and other used material be unload. In most cases, the ship will refuel for the next cruise;
- ◆ **Hub ports or base ports:** all the attributes of the previous two ports in addition to hosting a branch of the cruise line and being the home port for some of its ships. Repair and maintenance facilities would normally be available.

While ultimately most destinations and ports would like to be either a turnaround or a base port, particularly considering the opportunities for add-on services to be provided either before or after the cruise, with passengers extending their stays and local businesses benefiting from the

supply of goods to new cruise trips, the reality is that very few ports will become turnaround or base ports. In addition, cruise ships provide many great opportunities for destination ports as well. Firstly, it is not rare to find that for small destinations, the arrival of a cruise ship with thousands of tourists in one single day can generate sales that sometimes equals or surpasses the equivalent of weeks or even a month of revenue. Cruise passengers spend much more on shore than most non-cruise passengers (Douglas and Douglas, 2004b). Secondly, a day spent in a destination port can give the visitor the opportunity to experience the destination and eventually give them reasons for coming back in another trip to spend more time.

The real challenge for destination marketing organizations is to include their destination in a cruise ship itinerary. According to Douglas and Douglas (2004a: p.89), the first issue to be addressed is the necessary nautical details, which includes the “distances between ports, speed of travel required by the vessel to maintain its schedule and seasonal weather variations”. The same authors suggest that cruise lines usually involve several departments when considering a new itinerary: marine, sales and marketing, shore excursions etc. Gibson (2006) summarises the attractors for a good cruise port and destination (see Table 2).

**Table 2:** Analysis of attractors for a good cruise port and destination (source: Gibson, 2006 – reproduction with permission from the publisher).

Unique experiences	Heart of the city location
Average 35ft. (10.75 metres) water at low tide	Shopping
Deep draft sheltered berths	Capacity for mega cruise ships
Gateway port with easy access to destinations	ADA-accessible passenger loading bridge and mobile gangway
Port an attraction in itself	Comfortable, efficient and secure
Duty free	Dual-ship terminal
Suitable as home port, port of call or repositioning cruise port	Warehouse space (storage, stores and baggage handling)
Professional service	Panoramic views
Island port with diversity of attractions	International airport nearby
Cruise terminal with state of the art facilities	Perfect weather year round/warm weather destination
Sightseeing tours/shore excursions	Cultural and historical treasures
Exciting nightlife	Water sports and land sports

Although ferries are not as popular worldwide as cruise tourism, they are very common in certain parts of the world, including Europe – the Baltic, France, Italy, the Irish Sea, Spain and the UK and Oceania, particularly in Tasmania and across the Cook Strait. Roll-on/roll-off ferries are ships whose major advantage is the ability to cross large bodies of water, transporting both vehicles and passengers at the same time. Some of the more generic studies on ferries describe particular experiences of certain countries and regions such as Japan, UK, Indonesia and Europe (Baird, 1999, 2000; Dunlop, 2002; Rutz and Coull, 1996). One particular issue that deserved some attention in the literature was the impact of the construction of the rail Channel Tunnel on the North Sea / Channel ferry routes (Garnett, 1993; Peisley, 1992, 1997).

As water transport has always been the slowest mode of transport, Wang and McOwan (2000) consider the development of high speed craft technology as an alternative way to make sea travel more competitive. However, the new fast ferry twin hull technology has still to prove itself as a sustainable and viable option for sea transport, particularly in terms of its impact on the



marine flora and fauna. Recent failures include examples from The Lynx, across the Cook Strait, New Zealand (see Figure 3) and the Superferry, in Hawaii (Lohmann and Nguyen, in press). While it operated in New Zealand, The Lynx opened up new tourism markets as it allowed the cross of the Cook Strait in one hour and fifteen, rather than the three hours of the traditional ferries. Day trips out of Wellington to the vineyards in the Marlborough region was just one of the possibilities while The Lynx was in operation.

### 3.3 Ground-based transport

Ground-based transport, also known as land transport, comprises two modes of transport: rail and road. Rail tourism was one first forms of modern travel, particularly due its ability to transport large number of passengers between long haul destinations in an affordable way. Railways were built in many countries around the world in the 19th and early decades of the 20th centuries. However, due to the several advantages offered by road transport over rail, particularly cars that provide door-to-door accessibility with convenience of not having to adhere to a timetable and offering travellers privacy and freedom in terms of choosing their own itinerary, the importance of rail as a means to transport vacationing travellers has diminished after the second half of the 20th century (Boniface and Cooper, 2001).

At present, rail tourism is restricted to a few particular regions and countries around the world, as well as to some niche markets, including scenic trains (e.g. the [Rocky Mountaineer](#), in Canada, and the [Glacier Express](#), in Switzerland), heritage railways (the [Orient Express](#), [Rovos Rail](#) and the [Darjeeling Himalayan Railway](#)), overnight trains (in [Europe](#) and [Australia](#)) and high-speed trains ([France](#) and [Japan](#)). The advent of high-speed rail is, in some instances, providing a fast (but not as fast) and viable alternative to air transport between major urban centres. Perhaps the most obvious example is the EuroStar operations in Europe, which bring the added advantage of having urban terminus points which can often be more convenient for certain travellers, particularly those travelling on business.

Unlike air transport, which has several notable dedicated academic journals, the treatment of rail transport in the academic literature has been spread out across a number of publications. For this reason, Table 3 provides a brief list of articles on rail transport published in both tourism and more general transport journals.

Despite the current importance of road transport to tourism, particularly for short and regional touring travels, there is comparatively little research undertaken about this mode of transport. What we do know is that some types of road transport (e.g., cars, buses and coaches) feature as the most common means of transport used by tourists to both reach their destinations as well as while moving within a certain destination. In large part, this is a function of the size and scale of domestic tourism worldwide. For example, in Europe, the USA, New Zealand and Brazil, among other countries, at least 80% of domestic tourists use cars, buses and coaches (Palhares, 2002; Ward, 1987). In the case of private vehicles, one of the explanations for the lack of rich understandings of the use of road transport by tourists can be attributed to the absence of a formal, globally established industry in order to gather and collect information in a systematic, coherent way. Another reason is that road transport accessibility can disperse travellers over a wide geographic area, making access to them more expensive and difficult (Hensher *et al.*, 1991).

**Table 3:** List of articles about rail transport on tourism and transport journals (adapted from Lohmann and Oliveira, 2008).

Author(s)	Year	Title	Journal	Keywords	Region	Topics
Campos, J. (Campos, 2001)	2001	Lessons from railway reforms in Brazil and Mexico	Transport Policy	Concessions, Latin America	Brazil and Mexico	Privatizations and public-private partnerships
Charlton, C.; Gibb, R.; Shaw, J. (Charlton et al., 1997)	1997	Regulation and continuing monopoly on Britain's railways	Journal of Transport Geography	Privatization, Competition, Regulation, Deregulation	UK	Privatizations and public-private partnerships
Dallen, J. (Dallen, 2007b)	2007	Sustainable Transport, Market Segmentation and Tourism:	Journal of Sustainable Tourism	Market segmentation	UK	Rail tourism
Dallen, J. (Dallen, 2007a)	2007	The challenges of diverse visitor perceptions:	Journal of Transport Geography	Branch line railways; Destination transport; St Ives; Cornwall	UK	Rail tourism
Docherty, I. (Docherty, 2000)	2000	Rail transport policy-making in UK Passenger Transport Authority areas	Journal of Transport Geography	Passenger Transport Authorities and Executives; Rail policy-making; Urban regime theory	UK	Privatizations and public-private partnerships
Everett, S. (Everett, 2006)	2006	Deregulation and reform of rail in Australia: Some emerging constraints	Transport Policy	Deregulation	Australia	Deregulation
Fearnley, N.; Bekken, J.; Norheim, B. (Fearnley et al., 2004)	2004	Optimal performance-based subsidies in Norwegian intercity rail transport	International Journal of Transport Management	Incentive; Contract; Performance	Norway	Service quality
Gibb, R.; Lowndes, T.; Charlton, C. (Gibb et al., 1996)	1996	The privatization of British rail	Applied Geography	Deregulation, privatization, British Rail	UK	Privatizations and public-private partnerships
Givoni, M. (Givoni, 2006)	2006	Development and impact of the modern high-speed train: a review	Transport Reviews	High-speed train, investment, infrastructure	Europe and Japan	New technologies
Givoni, M.; Banister, D. (Givoni and Banister, 2006)	2006	Airline and railway integration	Transport Policy	Modal integration, high-speed trains, air transport	UK	Integration and competition
Givoni, M.; Banister, D. (Givoni and Banister, 2007)	2007	Role of the railways in the future of air transport	Transportation Planning and Technology	Air-rail; integration; substitution; air transport policy; airports		Integration and competition
Gutiérrez, J.; González, R.; et al. (Gutiérrez et al., 1996)	1996	The European high-speed train network	Journal of Transport Geography	Accessibility, high-speed trains	Europe	New technologies
Halsall, D. A. (Halsall, 2001)	2001	Railway heritage and the tourist gaze: Stoomtram Hoorn-Medemblik	Journal of Transport Geography	Railway heritage; Leisure; Tourist gaze	The Netherlands	Rail tourism
Haywood, R. (Haywood, 2007)	2007	Britain's National railway network: fit for purpose in the 21 <sup>st</sup> century?	Journal of Transport Geography	Railway network; Planning; Regeneration	UK	The role of railways in the economy
Jahanshani, M. F. (Jahanshahi, 1998)	1998	The US railroad industry and open access	Transport Policy	US railroad industry, bottleneck, open access	USA	Deregulation
Knowles, R. D. (Knowles, 1998)	1998	Passenger rail privatization in Great Britain and its implications, especially for urban areas	Journal of Transport Geography	Rail privatization, franchising, regulation, subsidy	UK	Privatizations and public-private partnerships

Link, H. (Link, 2004)	2004	Rail infrastructure charging and on-track competition in Germany	International Journal of Transport Management	On-track competition; Access charging; Competitive tendering	Germany	Privatizations and public-private partnerships
Milan, J. (Milan, 1996)	1996	The trans European railway network: Three levels of services for the passengers	Transport Policy	Trans European Railway Network, passenger transport, quality of services, travel speed, schedule delay	Europe	Service quality
Milan, J. (Milan, 2003)	2003	Multicriteria evaluation of high-speed rail, Transrapid Maglev and air passenger ...	Transportation Planning and Technology	High-speed transport systems; Multicriteria analysis; Entropy method; Interest groups	Europe	New technologies
Park, Y.; Ha, H.-K. (Park and Ha, 2006)	2006	Analysis of the impact of high-speed rail-road service on air transport ...	Transportation Research Part E	Aviation demand; Stated preference; Utility function	South Korea	Integration and competition
Pearce, D. G. (Pearce, 2001b)	2001	Tourism, Trams and Local Government Policy-making in Christchurch...	Current Issues in Tourism	Trams, urban tourism, policy development	New Zealand	Rail tourism
Pearce, D. G. (Pearce, 2001a)	2001	Tourism and urban land use change: Assessing the impact of Christchurch's tourist tramway	Tourism and Hospitality Research	Urban tourism, urban regeneration, trams, impact assessment, longitudinal studies, land use	New Zealand	Rail tourism
Pang, S. (Phang, 2003)	2003	Strategic Development of airport and rail infrastructure: the case of Singapore	Transport Policy	Transport infrastructure, trains, airports	Singapore	Integration and competition
Plakhotnik, V. N.; Onyshchenko, J. V. et al. (Plakhotnik et al., 2005)	2005	The environmental impacts of railway transportation in the Ukraine	Transportation Research Part D	Railway transport; Monitoring; Air pollution; Computer analysis	Ukraine	Rail and environmental impacts
Rideau, B. (Prideaux, 1999)	1999	Tracks to tourism: Queensland rail joins the tourist industry	International Journal of Tourism Research	Long-distance passenger rail; marketing; heritage nostalgia	Australia	Rail tourism
Stubbs, J.; Jegede, F.	1998	The integration of rail and air transport in Britain	Journal of Transport Geography	Air-rail integration	UK	Integration and competition
Thompson, I. B. (Thompson, 1995)	1995	High-speed transport hubs and Eurocity status: the case of Lyon	Journal of Transport Geography	Multimodal hubs, high speed trains	France	Integration and competition
Thompson, L. S. (Thompson, 2003)	2003	Changing railway structure and ownership: is anything working?	Transport Reviews	Multiple access to infrastructure, ownership		Privatizations and public-private partnerships
Turncock, D. (Turnock, 2001)	2001	Railways and economic development in Romania before 1918	Journal of Transport Geography	Agriculture; Economic development; Industrialisation; Urbanisation	Romania	Rail development
Wardman, M.; Shires, J.; Lythgo, W.; Tyler, J. (Wardman et al., 2004)	2004	Consumer benefits and demand impacts of regular train time tables	International Journal of Transport Management	Regular timetables; Passenger benefits; Stated preference	Europe	Supply and demand
Whelan, G.; Johnson, D. (Whelan and Johnson, 2004)	2004	Modelling the impact of alternative fare structures on train overcrowding	International Journal of Transport Management	Simulation model; Train overcrowding; Yield management	Europe	Supply and demand
Wong, W. G.; Han, B. M.; Ferreira, L. et al. (Wong et al., 2002)	2002	Evaluation of management strategies for the operation of high-speed railways in China	Transportation Research Part A	High-speed railway; Railway management; Hierarchy method	China	New technologies

Some of the research which associates road transport with tourism tends to analyse particular forms of travel or vehicles, such as taxis (Waryszak and King, 2000), recreational vehicles – e.g. campervans and caravans (Fidgeon, 1983; Gnoth, 1999; Janiskee, 1990; Jobes, 1984) or coaches (Dean, 1993). Meanwhile others focus on the road and highway perspective, such as the studies of Tyrell and Davit (1999), Smith *et al.* (1986) and Wallis (2001). As well, there exist useful studies describing drive tourism in a particular country, for instance Australia (Carson *et al.*, 2002; Prideaux *et al.*, 2001) and Bermuda (Teye, 1992).

Road transport can be grouped efficiently into two major types: 1) self-drive, including private and rental cars, and recreational vehicles; and 2) non-self-drive, such as taxis, bus, coaches and other specific segments backpacking buses (like the [Kiwi Experience](#), in New Zealand) and hotel buses (such as the [Exploranter](#), in Brazil). While there has been relatively little research into self-drive tourism in general (cf., Hardy 2003), it is obvious that this sector can be important in many regions around the world. Current studies on self-drive tourism can be grouped into a few disciplines. For example, studies of self-drive tourism behaviour undertaken from a psychology perspective have focused on behaviour and choices. Punter (1999) studied tourist behaviour regarding transport choices based on travel patterns including intra-regional and inter-regional trips. He concluded that the choice of holiday transport creates distinct holiday location and activity patterns for each modal group. EBay and Molnar (2002), analysing the factors that are routinely used by overnight drive tourists when choosing their travel routes, found that US drive tourists were more concerned with directness, safety, congestion and distance rather than if the route is entertaining or pleasant to drive. The scenic appeal of byways did not seem to be the major issue in route choice by their sample of drive tourists. Research by Moscardo and Pearce (2004) for example found that there are significant motivational differences between international, domestic with, and domestic without children tourists.

Understanding the behaviours and travel patterns of tourists using different modes of transport can be useful for destination managers. For example, in a study into visitor spending, Downward and Lumsdon (2004) identified a significant difference in expenditure patterns between drive tourists and public transport visitors, with the former spending higher amounts. In another study, Fredman (2008) found that travellers who regularly use rail or air spend more than drive or coach tourists. Lohmann *et al.* (2010) present the case of international travellers from the bordering countries of the Southern part of Brazil and how their choice to the two most visited destinations in this region, respectively Florianópolis and Balearic Camboriú, are influenced by the use of car or coach/bus. The concentration of attractions and activities in Balneário Camboriú makes easier for coach tourists to access it, as they can walk from one place to another while visiting this Brazilian seaside resort. On the other hand, in comparison to Florianópolis, where the popular beaches and second home locations distance several kilometres from downtown, the use of cars make it more convenient, particularly considering that public transportation is not efficient in most Brazilian cities. The authors also highlight that drive tourists in these destinations stay longer, are more likely to be repeated visitors and spend more than coach tourists.

The most structured segment in self-drive tourism is rental car companies. In spite of the existence of some large international rental car companies, with multi-billion dollar annual revenues, such as Avis, Budget, Enterprise and Hertz, surprisingly the car rental industry is not well documented both in the transport and tourism academic literature. Outside the academic arena, there are some expensive industry reports describing this transportation sector in different places of the world, including Europe (Russell, 1999) and the USA (Loveseed, 1996).

Lohmann and Zahra (2010) discuss the impacts that international tourists travel patterns in New Zealand have on rental car fleet management and the mechanisms used by rental car companies to relocate their fleet. Efficient capacity utilization lowers the possibility of running short on rental cars. Efficient distribution is another factor that keeps the industry profitable. Pearce and Sahli (2007) undertook a study where they compared the distribution channel system for two rental car companies in New Zealand: a multi-national and a local value-based one. They found some managerial and operational differences between these two companies that are summarized in Table 4.

**Table 4:** Managerial and operational differences between types of rental car companies in New Zealand (adapted from Pearce and Sahli, 2007).

	Multi-national company	Local value-based company
Outlets	Multiple outlets a national level, especially at airports, main centres and provincial centres	Limited to the main centres and do not include offices within the international airports
Fleet management strategies	Sends excess leased vehicles back to the lessor (aim to have 80% of the stock used at any given time)	Reduce the fleet by storing it
Client base	One third of corporate (predominantly domestic), one third inbound travellers and one-third 'domestic leisure'.	International, leisure travellers, especially budget travellers from Europe, Australia and North America
Distribution channels	75% of the revenue made through intermediaries (travel management companies, corporate travel agents etc)	80% of its revenue comes from direct sales to the customer

Despite the positive relationship between fleet sizes and the level of profitability, firms are constantly growing their fleet sizes because of the competitive forces associated with this sector.

## 4. Current policy and economic issues in transport

It is interesting to note that, despite the international pervasiveness of transport, it still remains highly regulated. It is regulated because governments worldwide hold considerable interest in transport systems. Governments are often called upon to ensure the efficient movement of goods and services as they form the backbone of national economies. Examples of regulatory oversight of transport provision include various aspects of subsidised supply (e.g., national rail or air services underwritten by government), safety and security oversight (e.g., airport scanning) and government ownership of transport service provision. Each of these is discussed in this section, but they contain an overarching theme with respect to tourism: in one form or another, each has an impact on the mobility of tourists.

### 4.1 Subsidisation of transport provision

Economic activities can have severe repercussions on the provision of many forms of transport (see, for example, Banister and Berechman, 2001), particularly when it serves a primary purpose of moving tourists from a point of origin to their destinations. This is especially the case in the air transport sector and is amplified in those destinations which are geographically remote or distant from key source markets (IATA, 2007). In general, however, when demand for transport

services falls during periods of economic instability, a key question for destination managers and government is what can be done to ensure access and valuable tourism receipts are maintained (Forsyth, 2006).

Several scenarios can be constructed. First, if the market is relatively 'open' – such that competition is not restricted through government regulation – discussion with other transport providers may lead to additional services being introduced. Second, and perhaps unusually, if the market is 'closed' – where competition has previously been restricted through government regulatory policy – an obvious choice would be to liberalise that access in the hope that additional capacity is realised. Finally, an increasingly common solution is for the destination/government to directly underwrite the services of the transport provider (Nolan *et al.*, 2005; Williams, 2005; Williams and Pagliari, 2004). This serves to guarantee capacity, especially valuable inbound tourists that would contribute to overall tourism receipts. The underwrite can also benefit the transport provider in that it guarantees costs are covered, and thus the variances in market demand for their services become less of a critical operating issue.

Some examples from air service provision underscore the increasing degree to which some air services are being underwritten by governments. In the United States, AirTran confirmed in June 2009 that its operations out of Wichita Mid-Continent Airport were profitable only as a result of direct subsidies in the amount of US\$6.5 million from the city, county and state (KSN News, 2009). Similarly, it was reported in July 2009 that Portland, Oregon directed a lump-sum subsidy in the amount of US\$3.5 million to Delta Air Lines to maintain direct links between the city and Tokyo, which were reported to be worth US\$61.2 million to the immediate region (Wall Street Journal, 2009). Further, more formalised programmes exist in Europe (Public Service Obligation, PSO – <http://bit.ly/bPFruc>), Australia (Remote Air Service Subsidy Scheme – <http://bit.ly/b7Yuan>), and the United States (Essential Air Service Programme – <http://bit.ly/bejnAW>).

Several critical policy questions emerge from the option held by destinations/government to underwrite transport services, with the first being the obvious question as to how much should be underwritten. The transport provider would likely not only seek to recover most costs (and even then it would be a question of whether this would only be traffic costs or capacity costs in the long-run), but also expect a reasonable return in the form of a profit. The destination, on the other hand, would likely attempt to offset pressure to direct, hypothetically, public funds to a private transport service provider that, in reality, realises a small profit in so doing. A second and equally pertinent policy question is what effect the underwrite has on the market. A critical question is what effect on market structure and competition can arise from an overt underwrite. By underwriting one provider, there may be a chance that the market is affected negatively in that potential firms seeking to initiate comparable transport services may not wish to compete given the existence of a public underwrite of one of their competitors. See, for example, Santana (2009), for a discussion of this in the context of the European PSO Programme.

## 4.2 Passenger security

Another key area in transport policy that has a direct impact on tourism relates to passenger security. Nowhere is this more prevalent and visible than in the context of air travel, and since the September 2001 events in the United States there has been substantial pressure on governments and airlines to demonstrate their ability to manage threat to commercial aircraft

both on the ground and in flight. Several policy responses designed to improve security and, by extension, passenger safety have been either implemented or discussed since, including physical searches and scans, biometrics (Haas, 2004) and profiling (Baker, 2002).

The United States has been at the forefront of policy measures designed to address concerns over air service security with the creation of a federal agency (the TSA – Transportation Security Agency) whose primary visible (but not necessarily administrative) function is passenger screening at the country's airports. In some cases, passengers may complain about such screening, arguing primarily that it is invasive and time-consuming, thus leading to poorer transit experiences even before they reach their destination (Rossiter and Dresner, 2004). One issue has been the growing view that full passenger records (including most demographic variables) could be required by governments of a destination country before passengers board their point of origin. Such information was required by US authorities from airlines operating services to the United States shortly after September 2001, over which there was debate over whether such actions violated EU privacy laws (Asinari and Poulet, 2004). While the legality of the collection and use of such detailed data has been raised (Heilbronn and von Nessen, 2009), it remains to be seen where the obligations by governments to ensure security will come at the expense of privacy codes and laws.

A more recent policy 'experiment' (in that full deployment has not yet been implemented nor fully advocated for political reasons) has been the use of full body scanners at major international airports. In January 2010, United States President Barack Obama urged foreign governments to deploy such scanners as a means of enhancing existing security arrangements. Critics have branded such measures as invasive, with some in the UK suggesting that they would break existing child protection laws that prevent indecent images of children to be created (Guardian, 2010). The full cost of such scanners, at least in the EU, has yet to be resolved, although the issue has received significant attention following the alleged attempt at igniting an incendiary device on a US-bound flight from Europe on Christmas Day 2009 (Flight Global, 2010).

Many aspects of aviation security are governed internationally by the ICAO – International Civil Aviation Organisation (a UN body). The primary document that guides international efforts is the Security Manual for Safeguarding Civil Aviation Against Acts of Unlawful Interference (see <http://bit.ly/cQCEko>). The importance to tourism of having an international organisation such as ICAO oversee security matters cannot be overstated. As countries become voluntary members of ICAO, they abide by, among other things, the security-related regulatory oversight that is required by all contracting states in order to enhance cooperation on common matters of concern, this facilitates commercial air travel by assuring states that foreign carriers (from States that are signatories to ICAO) abide by international standards. By extension, ICAO regularly audits contracting states' security provisions through its University Security Audit Programme. This serves to provide a uniform approach to key aspect of security provision and establishes an agreed-upon set of rules for countries (and their designated airlines) to follow and implement.

### 4.3 Supply/demand – managing externalities

Transport is invariably subject to shifts in supply and demand, with many forces that impact upon both being almost entirely out of the control of the transport provider. These 'externali-

ties' are generally seen as those factors or agents, which have either a negative or positive effect on either production directly or indirectly via the other agents that have direct production influence. Negative externalities reduce productivity, whereas positive externalities are seen to increase productivity. For transport and its relationship with tourism, negative externalities can take many forms, including shifts in regulation that result in an increase in costs to the firm, the price of oil (which became problematic for airlines in late 2008 and early 2009), and shifts in demand for transport services. It is the latter that is most important here, given that demand for transport products and services can be variable and thus difficult to forecast (Fischer, 1993). There is thus a need to discuss the wider impact of the relationship between supply and demand in transport in general. Understanding this relationship assists policy makers with decisions such as investment (directly or indirectly in the form of infrastructure), marketing responses (to incite interest in the use of transport for the purposes of either transporting tourists to or within a destination) and to calculate the economic impact of activities that actively involve transport in the tourist experience.

In many respects, the demand for transport services in conjunction with tourism will roughly be correlated to the demand for the experiences on offer at a destination for which transport is required for access (Halsall, 1992). On conjunction with that, demand is shaped by many key demographic variables, including family structure (Giuliano, 1997b) and age (Giuliano, 1997a). There is evidence to support consider cross-price elasticity when examining demand for transport and other goods as part of a wider holiday (Njegovan, 2006). This depends on the destination in question, and the overall correlation between transport demand and tourism demand can therefore be said to depend on the nature of the tourist experience sought (Prideaux, 2004). A family of four planning a holiday from the United States to South Africa will establish up-front transport costs as part of their overall budget, with the remaining costs for accommodation, amenities and attractions ostensibly being modified to fit with the overall travel budget. In this case, the demand for transport is relatively inelastic given that South Africa is the desired destination. When the destination does not form the focal point of the planned experience, more flexible planning and budgeting for transport expenditure as part of the overall holiday budget can take place, and thus the demand for transport can become more elastic. For example, a family of four in Europe looking for a week-long break may opt to travel to a destination based on the destinations available to them within a limited budget. As we discussed earlier, it is here where so-called 'low cost' carriers have driven business from secondary airports in Europe to (often equally secondary) airports in other parts of the same continent.

Thus, the demand for tourism and the variables that determine such demand will have a consequential flow-on effect for the demand for that mode of transport which may rely on tourist flows to be profitable. When economic conditions, such as those witnessed in 2009, effectively curtail demand for, in this case, international travel (which comparatively may be more expensive than domestic options), the effect on the primary mode of international travel (air) was affected deeply.



## 5. Conclusion

The importance of transport for the provision of tourism development cannot be overstated. As we have shown, transport forms a critical part of the tourist experience. It not only acts as a conduit by which tourists move from origin to destination (and even within and between destinations), but also serves to supplement the very tourist experience that is consumed. Transport is perhaps best characterised as a service experience that compliments the wider the tourism experience. Both share similar service-related parameters in that they are intangible and largely perishable.

Transport provision for tourism is prone to many external forces that affect the ability for tourism consumption to take place. Recent examples include the eruption of Eyjafjallajökull in Iceland in April 2010, which brought air transport throughout Europe to a grinding halt (but at the same time driving up the demand for other forms of transport, such as rail and marine, as a substitute). The global recession of 2008/2009 served to highlight the fragility of the commercial air transport sector, which, when combined with drops in demand, meant many traditional Western destinations received fewer international tourists on an annualised basis. Overall, with transport often acting as the lynchpin for tourism, there exists an enormous amount of interest in its viability and profitability. It is for this reason that governments are careful to ensure that transport is, to some extent, protected.

It will be difficult to change the hyper mobility society that many in the Western world currently live in. In spite of the trends to diminish the carbon footprint of travellers' displacement, particularly with the EU experience to cap carbon emission, or to encourage the use of other greener modes of transport or simple to opt for visiting closer destinations, the reality is that it will be hard to revert the role transport has for the existence of tourism and other activities. Transport and tourism are very resilient, as the events of 9/11 and the closure of the European air traffic in April 2010 have shown, with people choosing other types of tourism arrangements or transport choices. Regardless, however, transport will continue to play an important role in the provision of tourism development and tourist experiences.

## 6. Future issues and agendas

Predicting future trends in transport is difficult given the numerous variables that influence both the appeal and profitability of various transport modes. Several of these variables, however, play a key role at present and will likely continue to do so in the future.

- 1 Safety.** Safety measures are by and large the price of entry for transport modes in that their use and uptake by potential passengers will be possibly only if they are a) satisfied that the mode is generally safe, and b) that the regulatory environment within which the transport mode operates provides for adequate safety oversight. Safety continues to be paramount in ensuring the viability of transport modes, and thus potential passengers (and tourists) who perceive unsafe operations will actively seek substitutes. Oversight of safety in some modes of transport (e.g., air) generally falls to industry associations such as the International Air Transport Association and within individual countries, but a global approach to safety management and regulatory oversight is needed;

- 2 Emissions and other negative externalities.** Notwithstanding the case study below, the impact of negative externalities such as emissions, noise and other visual and environmental pollutants is fast becoming a highly contentious issue. One example is the vocal and highly-publicised opposition to a new runway at London's Heathrow airport on the basis of additional noise and other environmental hazards associated with airport operations. Another is the physical alteration underwater of natural harbours to accommodate larger cruise ships or the wash produced by the fast ferry catamaran technology. The ecological footprint of most forms of transport is reasonably significant enough not to ignore, but future policy debates will hinge on whether limited transport (and thus tourism arrivals from distant points of origin) will have a stronger negative economic impact than allowing transport activities to continue;
- 3 Changing travel patterns.** Without question, patterns of demand have enormous impact on the provision of transport, the networks of which are ostensibly designed to both meet that demand and translate latent into actual demand. This requires substantial and meaningful research by transport providers in order to understand market shifts, forecast and plan appropriately. Over the past few decades, this task has become easier with the proliferation of data sources. Many of these (for example, data solutions from the International Air Transport Association or from global distribution systems such as Sabre) are used by air transport providers for route planning. In cruise markets, online market research can be used to gauge demand for specific cruise destinations and on-board ship amenities. What these examples illustrate is a clear pattern of market knowledge on a scale not previously seen. Information and market intelligence is becoming a strong competitive asset, and thus we expect transport providers will continue to be at the forefront of ensuring that the information they have is timely and accurate.

Research in transport and tourism has flourished in the past few decades, as this review has demonstrated. It is becoming more mature as a subject of enquiry in not only the tourism discipline, but other disciplines such as air transport economics, geography, accounting and finance, and management. Much like predicting the future flows of tourists and their use of transport, predicting the direction of scholarship that investigates the tourism/transport nexus is equally difficult (an attempt has been made by Lumsdon and Page, 2004). That said, we offer two key directions that we feel could (and perhaps should) receive additional attention:

- A** The relationship between tourism and transport policy. For the most part, tourism and transport policy, as separate entities involve distinct but overlapping policy communities, remains the most pressing area of research. What is needed is a better sense of the process followed by governments as they assess the integration between tourism development and the necessity of transport provision for general economic growth and development;
- B** An understanding of the value of transport for tourism growth and development. There exists a need to fully measure the absolute value of transport for tourism development in such a way that allows policy makers to make informed decisions on transport access, development and even subsidisation, where applicable. This speaks to the desire to hold accurate and timely information as discussed above. Such information can also assist potential transport providers (where fully private or in a public-private partnership) with assess feasibility and viability of proposed or planned opportunities. "Value" can of course

be measured in several ways. Economically, it incorporates opportunity cost and can be modelled to include the role of predictors on an outcome. Socially, however, value is less concrete, and these qualitative or soft measures of value are captured longitudinally in measures of social capital, wellbeing and community. Tourism contributes to both of these measures, and by extension the provision of transport does as well.

## Case study – Emissions mitigation in air transport: implications for tourism

The scope and scale of global aviation is massive, accounting for an estimated 15 million jobs and US\$1.1 trillion of worldwide GDP (Oxford Economics, 2009). Against this, concerns over the contribution of aviation to global climate change continue to be raised. The purpose of this case study is to a) understand the contribution by air transport to global climate change through emissions from operations, b) evaluate policy options to mitigate air transport emissions, and c) discuss potential implications for tourism.

### A. Emissions and international air transport

There is a substantial body of literature that outlines the dangerous impacts of emissions from air transport (e.g., Lee *et al.*, 2009; Sausen and Schuman, 2000; Schumann, 1997). Critically, the damage from air transport emissions is increasingly being recognised, but even though the overall impact of air transport emissions is relatively small, the concern is that the rate of growth of global international air transport, and to some extent its association with leisure activities such as tourism, render it a target for mitigation action. The sector has not ignored these realities. In September 2009, the International Air Transport Association, a trade industry organisation representing approximately 230 airlines that account for over 90% of the world's scheduled traffic, pledged to a) reduce net CO<sub>2</sub> emissions by 50% by 2050, b) make all industry growth carbon-neutral by 2020, and c) cut CO<sub>2</sub> emissions by 1.5% per year each year until 2019. For some, however, such pledges may do little to stem the growth in commercial air transport and, by extension, the growth in resulting emissions.

Initially, it is important to understand broadly the nature of aircraft emissions and their impact on the environment. Emissions from aircraft occur at varying stages of flight, including during activities that precede and follow a flight. Ground level emissions have been measured with some accuracy, however it is the impact of a jet aircraft at cruising altitude (between 30,000 and 40,000 feet) where a considerable amount of science is currently focused. At issue is the relative impact of emissions from jet fuel combustion at cruising altitude, and some research suggests that the damage caused is significantly higher than emissions on the ground (Schumann, 1997). In addition to this, the precise impact of air transport activities at flight level on cloud formation is still not entirely known (cf. Williams and Noland, 2005), although there is strong evidence to suggest that aircraft contrails (the water vapour trails left in the sky) can contribute to some alterations in cloud formation and movement (Schumann, 2000) as well as ozone (Ponater *et al.*, 1999).

## B. Policy options

Policy options with respect to mitigating or assigning responsibility for international air transport emissions remain elusive, largely because of the political nature of the problem and the fact that air travel is an international activity that some economists, industry trade groups and airlines suggest necessarily necessitates a global solution. First, it is necessary to review concepts related to mitigation policy options.

Perhaps the most visible policy instruments are emissions taxes (sometimes called Pigouvian taxes or carbon taxes) and emissions trading schemes. Both put a price on carbon as a negative externality of commercial aircraft activities, but they do so in different ways. A carbon tax rate is set by a government such that any emissions over and above a particular amount shall be taxed (usually on a per tonne basis). Thus, the firm is incentivised to streamline production – or introduce innovations in production – that will minimise its tax liability. Emissions trading, on the other hand, simply puts a price a carbon by allowing firms to buy and sell permits in an open market. For each unit of emissions produced by a firm, one permit is required to be surrendered. In such a system, firms need to either reduce emissions or acquire enough permits to cover their emissions.

How each policy option can be efficiently applied to international air transport is somewhat problematic. Implementing a carbon tax is problematic for several reasons. First, aviation fuel is not combusted solely in the jurisdiction where the tax is imposed. Thus, a flight from London to New York will have expended fuel and generated emissions across the Atlantic as well as in both United Kingdom and United States airspace. If the United States were to tax all of the fuel from that particular flight, it raises the question as to why that airline is responsible to the United States for emissions generated across the entire flight. This is one reason why aviation and maritime bunker fuels have not featured as part of any global climate accord, including the Kyoto Protocol (and thus, international aviation is not included within Kyoto). Second, there is some concern that unilateral taxation or imposing carbon costs on international carriers within a particular jurisdiction violates many trade agreements in air services. These agreements feature fairly common sections that outline whether additional charges or duties ('taxes' are not usually mentioned specifically) can be imposed on flights arriving or departing a particular territory, or whether one country can apply legislation that violates the sovereignty of another's carrier (see, for example, Schwarze, 2007).

At the time of writing, only the European Union has including aviation in its regional emissions trading scheme, as confirmed in March 2009 most commercial aviation activities to and from EU Member States will be included in the ETS from 2012. Carriers will have a cap on their emissions, and thus will need to purchase additional permits as necessary. Globally, no such trading scheme exists that would encompass all international airlines, but in November 2009 the IATA argued that a global sector approach was necessary, rather than treat aviation within regional- or country-specific reduction efforts.

As both a carbon tax and a trading scheme seek to price the externality (carbon) generated from air transport, airlines will naturally seek to minimise their fuel burn in order to reduce their exposure to their associated additional costs. That said, as fuel represents perhaps the most significant variable cost in an aircraft's operation, reducing fuel use – especially during period of high oil prices – has always been sought by airlines. Aircraft manufacturers have responded over the past several decades by designing aircraft that are increasingly fuel-efficient.

Technological innovations in the past several decades that have aided in this include more efficient power plants from engine manufacturers (under pressure from both airlines and aircraft manufacturers), winglets on the end of wings, and lighter composite materials to reduce weight. The purpose of these innovations have generally been to help keep airline costs low, but they serve an important role in ensuring that emissions are as low as possible.

Airlines have also enacted operational procedures to reduce emissions, including removing weight from aircraft and reduce in-flight waste. Navigational procedures have also been enhanced recently in various regions around the world. One procedure, known as RNAV (or Area Navigation), allows for GPS-directed flight paths as opposed to ground-based systems which result in inefficient flight paths that deviate from the shortest path (Elder, 1996-1997). As well, RNP (Required Navigational Performance) is a guidance system for facilitating constant descent rates at airports as a way of facilitating aircraft movements as efficiently as possible, thus saving fuel and reducing emissions and noise (Clarke, 2003).

One area of operations that deserves attention is the use of biofuels (often simply called alternative fuels) as either a supplement to standard jet aviation fuels. These fuels, generally derived from an algae base as opposed to a kerosene base, may hold significant promise. Airbus indicated in November 2009 that alternative fuels could power up to 15 percent of global traffic by 2020. Several airlines (e.g., Air New Zealand, Continental, Qatar, KLM) have already undertaken demonstration flights, using a variety of blends and organic derivatives. The immediate near future of alternative fuel development seems to be focused on certification processes that will allow commercial production. Not surprisingly, many airlines are keen to see such fuels be developed and made available as they will help with cost management and any environmental operating targets.

### C. Implications for tourism

The implications for tourism from consideration of air transport emissions are likely to be varied and complex. Any attempt to put a price on carbon generated from air transport may result in the increased cost being passed on to the passenger. In some instances, and depending entirely on the price elasticity of particular markets and segments, this could have devastating effects for some destinations. A good example of this is the UK Air Passenger Duty as discussed earlier. In this case, the amount of the duty is correlated positively with the distance travelled. Thus, long-haul destinations, which thus rely on the UK market as a source for tourists, are thus concerned that the APD will render their destinations uncompetitive. Several destinations (e.g., Australia, New Zealand, various West Indian countries) expressed concern over the impact on their tourism sector when the UK decided to raise the level of the APD effective November 2009 (with another increase scheduled for November 2010).

Another implication for tourism is the consequence of operational decisions made by carriers and their resulting impacts on travel flows. A fundamental principle of airline economics generally holds that a carrier's costs (calculated as a cost per available seat kilometre, or CASK) should necessarily be lower than its revenue (calculated as the revenue per available seat kilometre) (Holloway, 2003). When costs increase, the resulting impact on margins means that the airline must find a way to either increase revenue or lower costs. In many markets, active competition has resulted in operations with extremely narrow margins such that cost reduction and revenue enhancements are already in place. Requiring an airline to account for the cost of carbon to its cost may result in unprofitable operations on a particular route where the regula-

tion of carbon is present. This is especially the case if it is unable to recover from passengers additional costs arising from imposed carbon or emissions charges. For example, it is reasonable to assume that a carrier may opt to cease operations to a particular country because that country has imposed a measure of accountability on the carrier for its emissions. It may do so because its assets (the aircraft it operates) can be more productive elsewhere where it may not face additional costs. In fact, this is one reason why critics of the EU ETS and its impending inclusion of aviation amounts to more or less a regional solution to a global problem (see, for example, Chen, 2009).

## D. Conclusion

It is clear that air transport-related emissions and their impact on climate are a pressing global concern. It is also evident that air transport as an economic sector will not likely be completely immune from any attempt to price the negative climate-related externalities generated by its activities. Perhaps the most critical task is determining the precise balance between aviation's negative externalities and its benefits to local, national and international economies (Chapman, 2007; Gossling *et al.*, 2008). Finding this balance is clearly a political problem. On the one hand, the connectivity and accessibility enjoyed by a territory as a result of air transport is positive for the economy as a whole, and thus in the short-term it is in the interests of a sitting government to ensure that employment and overall development potential is maintained. On the other hand, this short-term gain from connectivity and its resulting trade must be balanced against long-term damage caused by those very activities. Many suggest that this inability to identify and agree upon the precise balance between the two lays at the heart of 'failure' of attendees at the Copenhagen summit in December 2009 to arrive a new global accord relating to climate change at a more general level.

## E. Questions for consideration

- 1 If you were to advise a national government on whether to include inbound international flights into its domestic emissions trading scheme, how would you account for the relative importance of those inbound flights to the overall economy? What scenarios would be consider post hoc?
- 2 How might a global policy on internalising aviation emissions be structured such that developing countries are not shouldered with more than what some would consider to be their 'fair share' of emissions reductions? What could this mean to the shape of tourist flows if developed countries are asked to carry more of the burden in mitigating commercial aviation emissions?

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# Glossary

Apart from the terms presented at Table 1, other key terms used in this review include:

**ASK (available seat kilometers):** in airline economics refers to the number of seats (sold or otherwise) transported between two points (thus a standard measure of output)

**Cabotage:** a term used to describe the carriage of passengers taken on at one point and off loaded at another point within the territory of the same sovereign country.

**Freedoms of the air:** the nine freedoms-of-air regulate the rights of an airline to overfly, land and transport passengers in a foreign country.

**Gateway:** a concept from spatial geography, refers to a stopping or intermediate point of social or economic importance within a wider, linear network.

**Hub:** a concept from spatial geography, a hub refers to a central point of confluence of activities that radiate bidirectionally.

**International Air Transport Association (IATA):** An international organisation representing and serving the airline industry worldwide.

**International Civil Aviation Organization (ICAO):** United Nations specialised agency which is the global forum for civil aviation, working to achieve safe, secure and sustainable development of civil aviation through cooperation amongst its member States.

**RPK (revenue passenger kilometers):** in airline economics refers to the standard measure of the total number of paid passengers transported over a particular distance (as such, it is a distance-weighted measure of revenue).