

Elements & Roles of Transport in

destination development:

Air, Road, Rail and sea transport

TO3032: Tourism Transport and Technology

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1. Introduction

Tourism creates millions of jobs across the world, bringing considerable economic benefits to local communities (World Tourism Organisation, 2006) and has been employed as a mean of economic development (Hall and Jenkins, 1998). In order for one particular area to become a tourist destination, people must have accessibility to the area and the level of accessibility is very much dependants on the degree to which transport system is developed between the origin and the destination. Hence transport is an imperative component in tourism development. Depending on the political, technological and geographical condition, there are four main transport modes available to potential destinations, they are 'Air', 'Road', 'Rail' and 'Sea'. Each transport mode has different characteristic affecting their advantages and disadvantages in the context of tourism development. It has been argued that transport does not only connect the origin and the destination, but it also influences the tourist experience. Hence this present paper will examine the roles of transport in tourism development, how it influences the tourist experience and the application of the four main transport modes to tourism development.

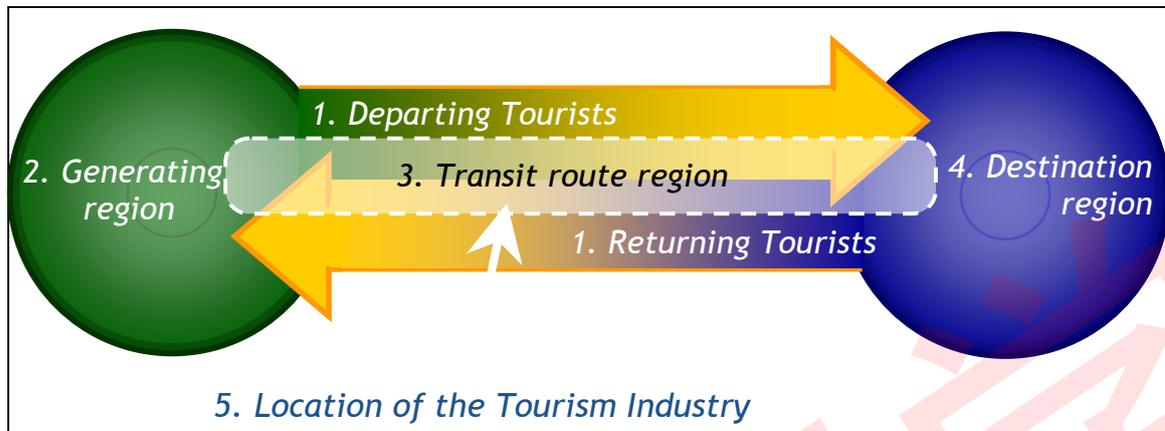
2. Nature of Tourism

Among the main factors that have contributed to the rapid growth in the tourism industry over the past few decades is that people are becoming wealthier, having more 'discretionary time' and 'discretionary money' and seeking experience (Weaver & Lawton, 2006). The term 'tourist' is commonly seen as '*an individual going outside his/her usual environment*', thus the fact that being a tourist involves these three factors indicates that tourism is, in a sense, a somewhat privileged activity for the rich. This is evident in the context of the international tourism, the major tourist generating countries are among those world top developed nations such as Germany, Japan, USA (Boniface & Cooper, 2001) and tourist-flow from those countries to developing countries is often the case and has been increasing in the past few decades, encouraging tourism to be employed as a strategy for regional economic and social development (Hall and Jenkins, 1998).

3. Tourism as a System

To participate in tourism activities, tourists have to take at least one mean of transport, which is classified into four different modes or 'form of transport' (Boniface &

Cooper, 2005), to get to the destination. This means it is highly unlikely that tourism will occur without transport. Leiper (1979) sees tourism as a system. His model is shown below.



Source: Leiper (1979)

As seen in the model, there is tourist flow between ‘Generating region’ and ‘Destination region’. It is transport that connects these two regions and makes the flow possible. Hence it is reasonable to assume that there would be no arrows in the model if it were not for transport in the model, that is, no tourist flows in reality. As Crouch & Ritchie (1999), Chew (1987), Abeyratne (1993) and Prideaux (2000) argue that tourism development would not start without transport and other basic infrastructure, transport is an imperative component of the tourism system. Thus the following section is about how transport assists in tourism development.

4. The roles of transport in destination development

Lim (1997) argues that transport infrastructure is among the most significant determinants of tourist flow, a number of researchers (Chew, 1987; Inskip, 1991; Martin & Witt, 1988) argue that even the attractiveness of a region as a tourism destination depends on the infrastructure base of the region. Even in Ancient times, transport infrastructure was one of the major factors encouraging people to travel. Ancient Romans, though limited only to the elite class, had a large selection of destination choices because of the remarkably sophisticated network of Roman military roads (Weaver & Lawton, 2006). Thus transport connects the tourist generating region to the destinations and its improvement or change will impact on the tourist flow in-between. As mentioned earlier, tourists are seeking experience and their experience depends very much on the quality of tourism products. Gunn (1988) argues that the quality of tourism product is determined by a process in which tourists

uses multiple services, including transport. Thus providing better transport system means providing better tourism products as Smith (1994) states that infrastructure and technology in a destination is important in enhancing the tourist experience.

4.1. Enhancing tourism product

Product development is a vital task for successful sellers since customers look for and choose better products in General. Smith (1994) argues that tourism is not different from other industries in that it has its own ‘generic products’, the conceptual commodity produced by the industry. He developed a model showing the elements of the tourism product. (See Appendix 1 for more detail).

- The physical plant
- Service
- Hospitality
- Freedom of choice
- involvement

The core of any tourism product is ‘the physical plant’ and that can refer to the condition of the tourism infrastructure, which certainly includes transport. Thus an improvement in the infrastructure will theoretically have a positive effect on the tourist experience. In Mount Desert Island, America, the traffic congestion and the environmental degradation were major concerns caused by tourism and the island decided to introduce a shuttle bus service to reduce the traffic flow as well as to relieve the environmental degradation. The introduction of the service had a positive effect on the tourist experience in that the tourists had smoother traffic flow, that is, the better condition of the tourism infrastructure (Cambridge Systematics, 2002)

Karl (1985) summarized nine roles of transport in tourism development (See the Appendix 2) and identified the importance of transport infrastructure as an indispensable element of successful destination development since it assists in creating new attractions.

4.1.1. Creation of a new site

Transport connects two or more different places that are geographically dispersed, thereby giving an opportunity to become a tourist destination, and creating a new

tourist site does not only mean a new destination but also a diversification of the tourism product, giving the tourists more options to choose from, which is a good indication in enhancing the tourist experience. Furthermore, while transport is a mean of connecting the origin and the destination, it also can be an attraction in its own right. An example of this is 'Skyrail' in Australia. Skyrail is a cableway that connects Cairns north region and Kuranda, It was voted 'best major tourist attraction' (Skyrail, 2000)

4.2. Safety and comfort

Another factor that should be taken into account in transport is safety and comforts that tourists have back home. As mentioned earlier, majority of the tourists are from developed countries and accustomed to modern and efficient transport infrastructure. Mo et al (1993) believes that those tourists expect to have the similar level of comfort and safety at their destinations. This is particularly true for tourism resort because the tourists tend to be from high-class segment (Khadaroo & Seetanah, 2007). This has an implication in tourism development. Prideaux (2000) points out that if it were not for transport system comfortable and safe enough, the tourism operators would weaken their competitiveness in that they would inevitably face higher operating cost, which will be reflected on the activity cost. Thus understanding what transport is comprised of is important.

5. The elements of transport

There are several elements that comprise transport system and Faulk (1990) found four basic physical elements. They are:

- **The way** - the medium of travel, such as road, railway, air and river.
- **The terminal** – access to **the way** for the users
- **The carrying unit** – what people or/and things get on. e.g. Aircraft, ship car.
- **Motive Power** – what a **carrying unit** runs on. e.g. Petroleum, wind.

Understanding these four elements is important in destination development process because their characteristics vary from mode to mode and those characteristics can be categorised as advantages and disadvantages for tourism development. Thus another element of transport is 'mode'. Boniface & Cooper (2005) classified transport into

four different modes. They are 'Air', Road', 'Rail' and 'Sea'. (See Appendix 3 for the summary)

6. Air transport

Confirming Kaul's 7th summery, improvements in the aviation industry have had a great impact on the tourism industry since the Second World War. Because of its characteristics not being influenced by natural barriers such as mountain, oceans and deserts, aircrafts can employ the shortest distance between two places provided some political agreements among the countries involved in the operation.

The advantages of air transport are its speed, range and high passenger capacity. Because of its superior speed to that of the other modes, this makes rural cities much more accessible in comparison to the other modes. With that progress in accessibility and its high passenger capacity will therefore give them an opportunity to become a tourist destination (Beiger & Wittmer, 2006). This is evident in how Cairns became one of the major tourist destinations in Australia after building the airport and the introduction of Low Cost Carriers (Prideaux, n/a). The speed of the aircrafts improved the accessibility to Cairns in terms of time spent on the journey and the high passenger capacity created a big tourist flow between Japan and Cairns, indicating that Cairns has something to offer and these are attractive enough. This tourism development in Cairns opened up some other adjacent areas as destinations such as Kuranda, Port Douglas, Green Island. This is a good example of how transport creates new destinations along with the primary destination. Without the development in Cairns, these sites would have been receiving fewer tourists than they actually do today.

7. Rail transport

The introduction of railways enabled large number of people to travel long distance relatively cheaply in the nineteenth century but the railways faced the decline caused by the competition from the introduction of air transport in long distance travel and from the private car in short journeys (Boniface & Cooper, 2005). It is argued that rail transport is suitable for journeys of 200-500 kilometers due to its speed and capacity to carry large numbers of passengers.

7.1. The advantages of rail transport

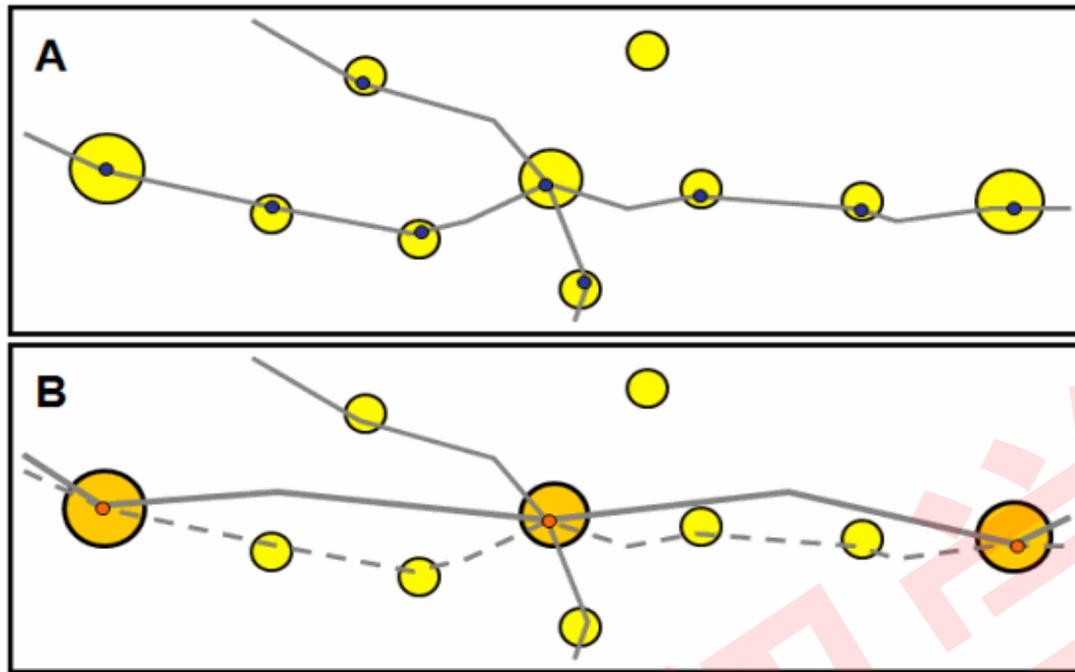
The key characteristics of railway transport are its 'way' and 'high passenger capacity'. The railway track being independent from the other traffic and 'high passenger capacity' can assist in less traffic congestion and fewer cars parked on the road being obstacles to other vehicles. Also 'terminal' is often located in the city centre unlike airports, thereby giving more convenience to the passengers (Prideau, 2008). Another advantage of rail transport is its flexibility in terms of extra carriages. They can be added or removed depending on demand.

These advantages in tourism development are well applied in Europe. While air traffic congestion is getting worse in Europe, railway transport is seen as an alternative transport. This trend is supported by the speed, which is up to 320 km per hour (Fouquet & Viscousi, 2007) with its punctuality. Thus railway transport is time competitive in Europe. Railway can be used as a link to airports. An example of this is Keikyu Main Line, which provides access to Haneda airport, the major airport for the domestic flights in Tokyo, Japan.

7.2. The disadvantages of rail transport

The major disadvantages of railway transport are its 'high fixed cost' for installment and 'By-passing effect' as to high-speed trains. The track being exclusive does not only give advantages but also some disadvantages when constructing the infrastructure such as tunnels and viaducts, and the maintenance of them, these costs are usually paid by the single user of the track (Boniface & Cooper, 2005). As mentioned above, the ordinary trains seem to be outdone by air transport and private cars. In order to compete with them, it is necessary to improve the speed as demonstrated in Europe and Japan, but the improvement in speed have an adverse effect on the other areas which had enjoyed their tourism industries due to an inevitable phenomenon called 'by-passing effect' (Rodrigue & Slack, 2008)

Since high-speed trains require some time to reach their competitive speed, the distance between stations must be longer than that of the conventional ones. The figure below illustrates this.



Source: Rodrigue et Slack.

As illustrated in figure B, new railways that connect only three stations have been installed. Because the speed is so fast, the rails must be straighter than the conventional ones or the trains will have to slow down otherwise. Thus it is fair to say that constructing new tracks, which involves ‘by-passing effect’, is inevitable in installing high-speed rails.

Constructing new rails will make its ‘high fixed cost’ even costly and those cities that do not have high-speed rail stations will have less tourist flow. This disadvantage can be applied to air transport too. Co-operation with road transport is likely to relief the problem.

8. Road transport

While air transport has superseded rail transport in the long-haul travel after the Second World War, the private vehicle, with better range of road networks, has become the dominant transport mode in the short-distant travel Boniface & Cooper (2005).

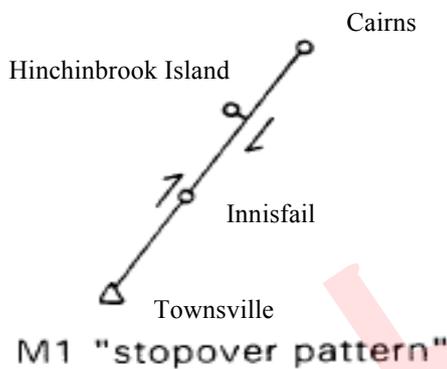
8.1. The advantages of road transport.

The key characteristics of road transport, for example a car, are its ‘Flexibility’, ‘Relatively low speed’ and ‘Low passenger capacity’, making them

suitable for short to medium distance journeys (Boniface & Cooper, 2005). Being flexible means that the passengers are

- able to enjoy its Door-to-door flexibility
- not restricted to any time-tables
- able to decided or change their destination at a whim of the tourist

With a private car tourists do not have to go to terminals to transfer themselves to the destination, this gives them greater mobility within the destination. Because there is no time table for a private car in general, tourists can decide when to leave for the destination and when to return home. Another thing is that they are free to add more destinations on the way to their primary destination.



Source: Oppermann (1995)

For example using the model above, Tourists driving from Townsville to Cairns, Australia, can stop at any cities in between them, such as Hinchinbrook island, Innisfail, linking some minor attractions. Also A car as a transport mean is perceived as inexpensive because of economy of scale (Prideaux, 2008). Even if a car has low passenger capacity, it is reasonable to assume that three or four persons fit in a sedan, those passengers can share the petrol cost. The air fare from Townville to Cairns is around 100 dollars per passenger while tourists driving an ordinary sedan with 4 passengers including the driver are least likely to spend the same amount of money as the air fare on the shared fuel bill. (Insurance, registration fee are not taken into account in this context, thus 'perceived as inexpensive).

Bruce & Carson (2003) states that a significant proportion of domestic travelers utilises as their main form of transport. That popularity in road transport will have an

impact on the surrounding areas and transit regions in the form of the constructions of caravan parks and motels.

8.2. The disadvantages of road transport.

Unlike rail transport, the way is shared with other vehicles. This, combined with its popularity, often results in traffic congestion. Traffic congestion will depreciate its great mobility and there will be a concern with time wasted in the congestion. Thus in order to cope with the issue and maintain its advantages, it is necessary to expand the infrastructure such as constructing toll roads, bridges, highways and pricing a certain areas so as to manipulate the traffic flow. However it is important to note that these new constructions will have negative environmental impact on the destination.

(Prideaux, 2008). Offering some public transport services such as city bus is another option. As a mean of economic development, tourism industry should be sustainable, Andriotis & Vaughan, 2003 believes that sustaining the economic benefits will require managing local hostility against tourism. Prideaux (2008) argues that separating visitor traffic from local traffic will alleviate the conflict between users including locals, which will in turn relief the locals' negative perceptions towards tourism.

Another concern with road transport is 'safety'. Being a driver rather than having someone drive not only gives flexibility but also some safety issues to be addressed, especially when tourists are driving in the desert without professionals could put them in dangerous situations such as when car beaks down and the tourists do not know how to repair or lost their way in the dessert etc.

9. Sea transport

Due to its relatively slow speed and being highly dependant on the availability of good harbour conditions en route so as to avoid sever weather conditions such as storm and ice hazards. Most of the long-haul market on the north Atlantic routes where high proportion of the world maritime traffic was occurring(Pride was superseded by air transport (Boniface & Cooper, 2005). Nevertheless technological advances are beginning to overcome some of these disadvantages of sea transport.

Some of the advantages of sea transports are that:

- relatively little power required
- much larger specification than that of any vehicle or aircraft, that allows the passengers to carry their private cars.
- high degree of comfort.

From the operators' point of view, low initial investment (See the appendix 3) and relatively little power appear to be attractive. Thus it has a potential to open up a new destination and/or diversifying the tourism product within the existing destination. With its capability of carrying passengers' cars and the popularity of motoring holidays as mentioned above, passenger traffic on the short sea routes is increasing rapidly throughout Western Europe (Boniface & Cooper, 2005).

With its high passenger capacity and the provision of high degree of comfort, sea transport can become a tourism product in its own right, known as a cruise ship. Since the industry is for upper income groups and with its high passenger capacity, the industry is very important to most of the Caribbean nations (Tilman, 1994) and the cruise industry in the Caribbean is enhanced by its wide range of cultural difference among the nations. (Lighthouse foundation, 1997). Thus sea transport is very competitive and important to island destinations where airports may not be pragmatic provided that there is something to offer.

10. Conclusion

When tourism is viewed as a system, it clarifies that transport is an imperative component of tourism as its primary role is to connect the origin and the destination. But transport does not only connect them, it also influences the tourist experience in that the quality of transport available to tourists is part of the tourism product that tourists are seeking. Thus destinations must have something that is attractive enough to stimulate demand. Transport is comprised of four main modes and each of these has different characteristics being advantages and disadvantages in tourism development and those disadvantages can be complimented by combining two or more different modes. Hence understanding the characteristics of each mode and combining different modes, if necessary, in order to make the most out of those advantages is a crucial process in the context of tourism development,

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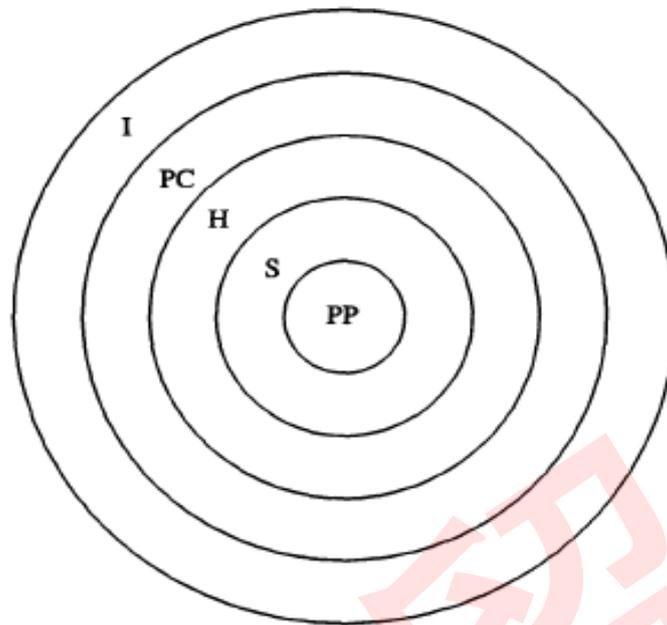
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Appendix 1

The generic Tourism Product

Source : **Smith, 1994**



PP = Physical Plant **FC = Freedom of Choice**
S = Service **I = Involvement**
H = Hospitality

- The physical plant – A site, either fixed property such as a hotel or mobile equipment such as a cruise ship. Condition of the tourism infrastructure
- Service – The performance of specific tasks required to meet the needs of tourists. E.g. front desk operation.
- Hospitality – Enhanced service or something extra. Style or attitude in which the task is performed whereas service the technically-competent performance of a task.
- Freedom of choice – The necessity that the traveler has some range of options in order for the experience to be satisfactory. Any satisfactory tourism product must include some element of choice.
- Involvement – The elements above set the stage for physical, intellectual and emotional involvement in travel services. Not only physical participation, but also a sense of engagement

Appendix 2

The role of Transport

Source : Karl 1985

1. The evolution of tourism is greatly influenced by and is a function of the development of the means of transport.
2. Tourism is a mass phenomenon as well as an individual activity, which needs and calls for transport and other facilities suitable for each category.
3. Transport facilities are an initial and integral need for tourism and operate both as an expanding as well as a delimiting factor for traffic flows; the quality of transport services offered also influences the type of tourist flow.
4. The planned development, maintenance and operation of transport infrastructure under a well conceived overall transport policy, to meet the present and future technology and demand requirements, is the key to the success of the transport system contributing to the growth of tourism
5. Transport prices influence elasticity of demand for traffic and diversification of price structure and competition has encouraged price reduction and qualitative improvements amongst modes of transport much to the benefit of tourism
6. The integration of domestic and international transport systems and parallel co-ordination with other countries, contributes to the ease of tourism flow and growth of domestic and international tourism.
7. Transport technological developments would exercise a deep influence on the means and patterns of transportation in both developing and developed societies, with the result that a more efficient, faster and safer transport system, beneficial to the growth and expansion of tourism would emerge and evolve.
8. Accommodation, as an essential ingredient of tourism development and success, must maintain comparative growth to meet the increasing and diverse demands of tourism and transport expansion.
9. The satisfactory development and equipping of terminal and en-route facilities the systematic improvement in infrastructure the absorption and adoption of new technology and appropriate mass marketing techniques in transport would have a pervasive impact in the continued growth of future world tourism

Appendix 3

Characteristics of transport modes (source: Boniface & Cooper, 2005)

Mode	Road	Rail	Air	Sea
Way	Normally a surfaced road, although 'off road recreational vehicles' are not restricted	Permanent way with rails	Natural	Natural
C/U*	Car, bus, or coach Low capacity for Passengers.	Passenger carriage. High passenger capacity	Aircraft. High passenger capacity	Ships. Can have a high degree of comfort. High Passenger capacity
M/P*	Petrol or Diesel engine. Some use of electric vehicles	Diesel engines. Also electric or steam locomotives	Turbo-fan engines; turbo-prop or piston engine	Diesel engine or steam turbine.
Ad*	Door-to-door flexibility Driver in total control of vehicle. Suited to short journeys	Sole user of the way allows flexible use of carrying units. Suited to medium, long journeys ,to densely populated urban areas. Non-polluting	Speed and range. Low fixed costs. suited to long journeys	Low initial investment. Suited to either long-distance or short ferry operations
DisAd*	way shared by other leading to possible congestion	High fixed costs	High fuel consumption and stringent safety regulations air an expensive mode High terminal costs	Slow. High labour costs

C/U- Carrying unit
M/P- Motive Power
Ad - Advantage
DisAd - Disadvantage

Significance for tourism

Road –Door-to-door flexibility allows tourist to plan routes. Allows carriage of holiday equipment. Acts as a link between terminal and destination. Acts as mass transport for excursions in holiday areas

Rail – In mid-nineteenth century opened up areas previously inaccessible for tourism. Special carriage can be added for scenic viewing, etc. trans-continental routes and scenic lines carry significant volume of tourist traffic.

Air – Speed and range opened up most parts of the world for tourism. Provided impetus for growth of mass international tourism.

Sea –Confined to cruising (where luxury and comfort can be provided and ferry traffic