Contemporary Issue in the Remote Tourism Industry.

The current transport technology being dependant on fossil fuel and its implication on remote tourism caused by the rising oil price.

TO3032: Tourism Transport and Technology
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1. Introduction

Over the past few decades, there has been growing demand for long-haul travel brought about by the technological development such as the advanced aviation sector (Bieger & Wittmer, 2006) and some peripheral areas where no tourists would go to otherwise are encouraged to take advantage of this trend as an economic development in the communities (Moscardo, 2007), Those successes in tourism developments indicate that there surely is high demand in the origins and/or the destinations are attractive enough to generate or instigate the demand. However even though there is high demand for such rural areas as their holiday destinations, very few people would spend their holiday at those destinations if it were not for adequate transport system between the origin and the destination (Prideaux, 2000). Thus it is vital for those destinations to be familiar with the way the tourists come to the destinations, which is transport, and to carefully monitor the trends and events about this important component of tourism so as to induce the possible consequences. One of the recent concerns over the transport industry is the rising price on fossil fuel due to more demand and less supply, Gössling et al. (2005) argue that tourism is energy-intensive, which means it consumes considerable amount of fuel, thus the consequence will come down to the travellers in the form of higher price on their tickets and to those airlines ceasing their routes which are not profitable enough and as a result, there will be less tourists. Another concern is the greenhouse gas effect on the climate change, people are becoming aware of their carbon footprints and would be reluctant to go on a long-haul travel (Rosenberg, 2007). Even though this may sound pessimistic to those rural areas, there have been arguments about how technological development will solve the problem, such as more fuel-efficient engines, engines which run on hydrogen, bigger aircraft whereby reducing CO2 emission per passenger, photovoltaic, cold fusion etc. Therefore the present report is about the possible impact of the rising fuel price on the current tourism industry, mainly focusing on the rural areas where distance from tourists' origins is a major concern and how this issue could be addressed with technological development in the future. Before going into the implication that the rising fuel price would bring about on the tourism industry, it seems quite reasonable to introduce how tourism and transport are related.

2. The relationship between transport and tourism

Tourism never exists without tourists to the destinations. Weaver & Lawton (2006) defines a tourist as '*A person who travels temporarily outside of their usual environment for certain qualifying purposes*'. Therefore, tourists have to employ some means to transfer themselves to where they are intending to be. There are four major modes of transport, which are 'road', 'rail', 'air' and 'sea' (Boniface & Cooper, 2005). (See the appendix for details of each mode)

Besides that fundamental relationship between transport and tourism, Kaul (1985) argues that developing transport system will induce the creation of new attractions and the growth of existing ones, whereby stimulating more demand. This is evident in the case of Mauritius where Khadaroo & Seetanah (2007) found that the transport infrastructure in the islands is positively contributing to the tourist numbers. Furthermore, in order to manage increased demand, new transport development will be required (Bruce, 2008) Hence these two sectors are positively affecting each other.

3. Oil and tourism

Transport, being an imperative component of tourism, is a fuel-intensive industry (Gössling et al, 2005). Aircraft, automobile, ship and rail, almost all of them run on fossil fuel either directly or indirectly and this is evident in the fact that transport consumes over 50% of total oil per annum globally (Becken, 2008). Thus the availability of oil is a critical factor of tourism. However fossil fuel is something that can not be reproduced after consumed and the more it is used, the less available it will become, which will, in turn, raise its price given the fact that demand is expected to grow (International Energy Agency(IEA), 2005)

3.1. The rising oil price and tourism

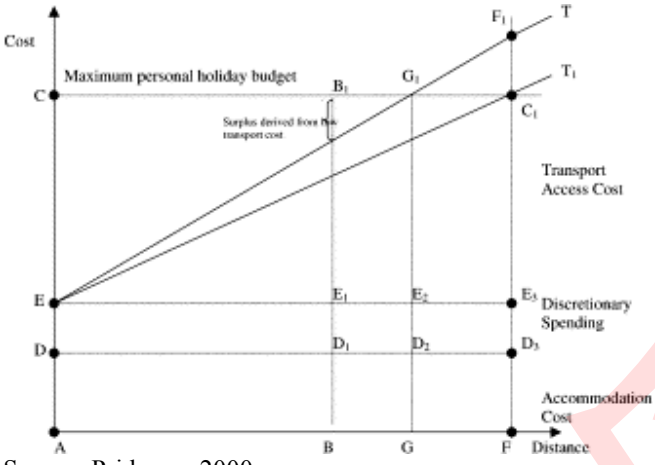
Some of the arguments that have been made in response to the rinsing oil price are :

- Higher price for travel = lower demand
- Tourism will not be a priority in oil allocation.
- Carbon tax.

The following sections are about each of these three points and how are these expected to impact on the transport industry and their subsequent impacts on the peripheral tourism destinations.

3.1.1. Higher price for travel causing lower demand

Transport cost is a major determinant especially selecting peripheral areas as holiday destinations, this is evident in how Low Cost Carriers, such as Virgin Blue and Jetstar helped some peripheral areas develop their economies (Prideaux, n/a), in this matter cost represents time too. Prideaux (2000) introduced his transport cost model that visualises how tourists select their holiday destinations. The model is shown below.



Horizontal line = Distance
Vertical line = Cost

Line T = Higher transport cost
Line T1= Lower transport cost

Source: Prideaux, 2000

The graph assumes that 'Maximum personal holiday budget', 'Discretionary spending' and 'Accommodation cost' is constant no matter how far tourists go, which makes it easier to understand the significance of transport cost in destination selection. when transport cost is lower (T1), a tourist can afford to go to the destination C1 but if transport cost become higher(T), he/ she will have to change his/her plan in order not to exceed his/her 'Maximum personal holiday budget'. Some of the options will be:

1. Select a closer destination such as G2 or B1(saving some money)
2. Reduce the budget on 'Discretionary spending' and go to C1
3. Reduce the budget on 'Accommodation cost' and go to C1

In any case, peripheral destinations will receive less economic benefit. If a tourist chose the option 1, the destination will have no benefit from the tourist. Even if the tourist chose either the option 1 or 2, the total amount of money is would be less than that would have been spent when transport cost is lower.

Moreover it is possible that the rising fuel price will lead to the end of some of the transport route due to less profitability. An example of this is that Jetstar will end its service from Cairns to Japan (Not available, 2008) and connect Gold Coast and Japan. Although there still might be demand for Cairns, those potential tourists are less likely to visit the destination (e.g. not direct flight = transit = increase in time cost)

3.1.2. Tourism will not be in a priority oil allocation.

What encourages people to travel is called 'Push factors' (Weaver & Lawton, 2006), one of which is 'economic factor', meaning people have more discretionary household income. Another one is 'Social factors', meaning people have more discretionary time. Thus the extent to which people engage in tourism depends very much on how much discretionary time and money they have, in other words, tourism comes last of their subsistence needs. Gillen, Morrison, & Stewart (2004) argue that long-haul and business travel are less likely to be influenced by the rising price in comparison to other travel, whereas Becken (2008) takes into account the possibility of no international tourism taking place and he predicts domestic tourism and local recreational activities to become popular. In that case, roadside-business such as motels, restaurants on highway and some old destinations which once lost their business due to the popularity in the air travel might re-flourish.

3.1.3. Carbon Tax

As mentioned earlier, 50 % of total global oil consumption per annum attributes to transport and it is therefore largely responsible for the climate change. Some European countries are taking actions toward the problem such as introducing 'Pollution Credit' (Euractive, 2007). Tol (2007) argues that this trend is due to the increased pressure on the reduction in the CO2 emissions from the aviation sector and he conducted a simulation in which carbon tax is applied to the aviation sector. He found that:

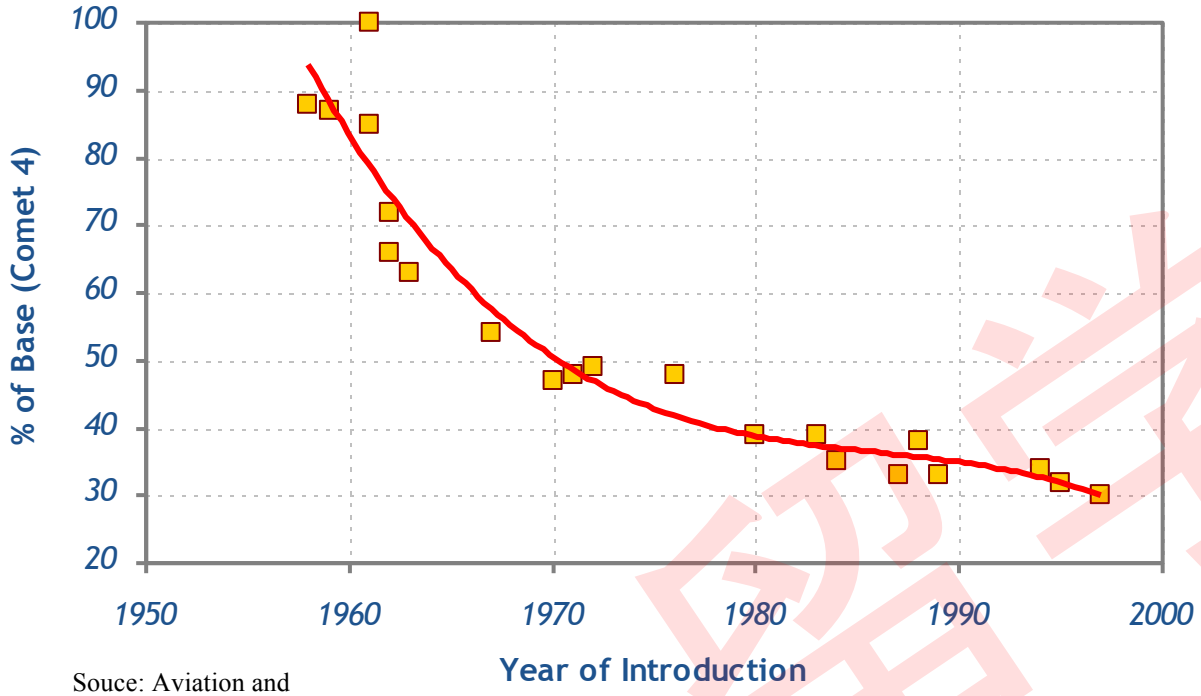
- Long-haul flight ⇨ medium flight
- Medium flight ⇨ short distance car and train holiday
- Short-haul ⇨ medium flight
- Island tourism disproportionately influenced.

According to his simulation, those rural areas dependant on long-haul flights and short-haul flights such as island resorts would be largely affected by the tax, while other destination might see increase in tourist number. He also concludes that local recreational activities and train holidays may become popular.

With the contemporary transport technology, it seems inevitable for those rural areas to see decline in their tourist number. Yet technology is constantly evolving and the following section is the next generation technology that may help the current situation.

4. Technological development

There has been a rapid technological improvement in the past few decades, the graph below shows how efficient aircrafts have become in the last 40 years.



Souce: Aviation and
the global atmosphere

It is worth noting that the graph is up until the late 1990 and does not take into account 'Airbus A380' and 'Boeing 787 Dreamliner'. Whereas the conventional aircrafts carry around 250-300 passengers, A380 is capable of carrying up to 835 passengers (EADS, 2008), improving the efficiency per passenger. Boeing 787 is claimed to be 20% more fuel efficient than the other equivalent aircraft as a result of its better engine and lighter materials (Boeing, 2008). It is technically possible that aircrafts run on hydrogen whereby emitting only water and nitrous oxide, yet there are some problems that need to be addressed (Maniaci, 2006). For example there has been an argument about this hydrogen technology in that even though hydrogen does not emit CO2, producing hydrogen does and it will eventually emit more CO2 than contemporary cars (Bossel, 2006), there are also some problems yet to be overcome for the economical feasibility of such technology (Talbot, 2007). Photovoltaic is another source of energy, it has a great potential to become a clean alternative energy source and the amount of energy that can be generated is enormous, it is said that the total world demand for energy can be provided with the solar panel spread in the entire Gobi desert (NEDO, 2008), which is only a small portion of the entire world.

The use of this technology in transport has already in place but its commercial feasibility is yet to be achieved. Another source of energy, which is currently seen as pathological science, is cold fusion. The success of this experiment, if this became technically possible, is said to provide an unlimited source of energy (Browne, 1989). Even though this technology seems impossible with the contemporary science technology, it might become possible in the future as, today, Superconductivity, which was once believed to be possible at around absolute zero, is achieved at relatively high degree (High-temperature superconductivity).

5. Conclusion.

Transport is a critical component of the tourism industry in that it transfers tourists to their destination from their origin. Therefore better transport system facilitates and increases the tourist flow. Tourism is a consequence of individual 'discretionary money' and 'time', thus if the cost of transport increase, people are more likely to choose short-distance trip. This is an important concept to understand for those rural destinations dependant on the aviation sector due to their remoteness. The rising fuel price leads to higher price on travel and higher price has an adverse affect on the number of tourists, which will, in turn, cease some routes. In that case, the potential tourists would have to spare more time to get to the destination, if they still chose to visit the destination. With the contemporary transport industry being dependant on fossil fuel, those rural destinations will have to face some decline in tourist number. Nevertheless, they can arrange some charter flights, negotiate with the airlines with more fuel efficient aircrafts and try different market to deal with the current situation. When transport is not dependant on fossil fuel and run on cleaner energy such as hydrogen, solar power, or energy by cold fusion as well as an increase in the speed of transport, those destinations might recover or enjoy more tourist number in the future.

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Appendix

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 ca-acity	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 consum-ption 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 - Disadvantag

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)