

NEW TOURISM IN A NEW SOCIETY ARISES FROM “PEAK OIL”

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Mass international tourism has thrived on the abundant and cheap supply of energy, and this may be about to change as the world moves towards “Peak Oil”. The resultant scarcity and high price of all energy fuels will produce changes in human activities across the board, and specifically in tourism. In this looming transitional era, which has probably already arrived, tourism needs to make some dramatic changes to harmonize with the new realities of a post-energy world and its new society.

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JEL Classification: L83, M1, O1

INTRODUCTION

“Peak Oil” occurs when the world has consumed half its available oil supplies, and at that time production levels will be at their maximum. However, from there, the levels of production begin to decline, as the last half is used up, and until exhaustion point is eventually reached. Declining production levels, leading to oil scarcity and high prices, have sobering implications for all human activity – including mass international travel and tourism, which has been built upon abundant and cheap oil and energy supplies.

In recent history, up to just after World War Two, travel and tourism were largely made possible by road, rail and sea. However, with the introduction of the hugely successful Boeing 707, mass international tourism was made possible, and began to take off as a modern phenomenon in the 1960s. Boeing produced and delivered just over a thousand of these commercial jet passenger planes which dominated the passenger air travel industry in the 1960s, and remained very popular well into the 1970s. And so the foundation was laid for mass international jet air travel.



Tourist arrivals increased 12 fold from 1960 to 2008. World international tourist arrivals have grown at the rate of 4 % percent a year from 1990 to 2007, amounting to a total of nearly one trillion in 2007 (WTO, 2008, p. 3).

Travel and tourism as the world's biggest industry has some impressive statistics. In 2005 world employment in the industry was 221,568,000 jobs, amounting to 8.3% of total world employment, or a ratio of one in every twelve jobs. The sector's economy contributed \$4.7 trillion to the world economy, making up a total of 10.6% of world GDP. By 2015 travel and tourism are predicted to grow considerably to \$7.8 trillion of economic activity and over 269 million jobs (Goeldner and Ritchie, 2006, p.26).

Yeoman (2008a, p. 9) records and predicts: "In 1950, 25 million people took an international holiday; by 2030, we predict that 1.9 billion people will take an international holiday". In the same mindset, the following table from Goeldner and Ritchie (2006, p. 556) shows what many hope and even predict will be the continued strong growth of international tourism in the next decade:

Table 1 International Arrivals		
Forecast of International Tourism		
Arrivals 2010, 2020		
Regions	Tourist Arrivals (millions)	
	2010	2020
Europe	527	717
East Asia/Pacific	231	438
Americas	195	284
Africa	46	75
Middle East	37	69
South Asia	11	19
World	1,047	1,602
(Goeldner and Ritchie, 2006, p. 556)		

Spectacular economic development over the last century has been fired up by the abundant cheap supply of energy resources, and particularly oil. More specifically mass international tourism was made possible and even facilitated by the abundant supply of cheap energy across the board, based on the energy progenitor, conventional cheap and abundant crude oil.

But this may be about to change due to various global factors that are now being expressed through worldwide economic decline. The United Nations' tourism organization [the World Tourism Organization] has predicted that international vacation travel could drop up to 2% in 2009 as the global economic crisis worsens (Yilmaz & Gunel, 2009). Europe's tourism industry would likely see the largest drop in visitors, but that small countries dependent on foreign spending might suffer most, said Talib Rifai, secretary general of the U.N. World Tourism Organization (WTO). Rifai recalled the "bullish years" of 2004-2007, when travel and tourism growth averaged 7%. He said the present crisis "is not a tourism crisis. It's an economic crisis that spills over into tourism" and therefore becomes a problem for the tourism industry. Another spokesman for the WTO, however, warned that travel could fall by as much as a threatening 5%. "That's not an official UNWTO position, but I'm being very straight with you," Geoffrey Lipman said to reporters (USA Today, 2009).

Goeldner and Ritchie (2006, p. 65) suggest that "wars, unrest, and terrorism are detrimental to tourism. Peace, prosperity ... and reasonable travel costs remain the essential ingredients needed for universal growth of travel." So with rising costs we could expect to see universal growth of travel challenged.

While many factors feed into the causes for world economic decline, like rampant fiat currency credit and peak phenomena (increasingly scarce supplies energy, food and other goods) leading to higher prices, the recent oil price spike to almost \$150 a barrel (bbl), in July 2008, surely has facilitated a prompt arrival of the present economic decline of the whole world.

Many have suggested that the leveling out of oil supply has brought dramatic spikes in the price of oil. Actually we may be moving beyond Peak Oil – into an era of scarce supplies of energy and much more expensive energy. This will have profound effects on all human activity, in all the arenas of economy, politics, geopolitics and society. These developments will change many of our behaviors, including of course, the nature and extent of travel and touristic activity.

Ian Yeoman, academic and tourism futurologist, made the following introductory comments in his book on the future of tourism (2008a, p. 3):

"I wanted to write this book in order to set out where I think world tourism will be in 2030. As the world's only dedicated scenario-planner and futurologist in the tourism field I am in privileged position. I could have been controversial and

predicted the end of the world because of high oil prices, war in the Middle East, demographic time bombs, pandemics and terrorism. ... I do believe that tourism is changing ... ”

However, Yeoman’s work disappoints, as it adheres to uniformity. In his view, events and trends will more or less continue on as they are with increasing, and even universalizing economic development, and wealth.

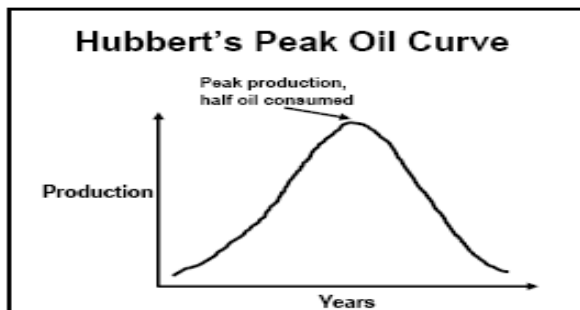
Unfortunately Yeoman’s book fails to engage with the fundamental overall trend of high oil prices in the contemporary world. Actually he continues on in the rest of the book without adequate consideration being given to the potential massive impacts that oil prices, war, demographic challenges, disease pandemics and terrorism, could have, to greatly alter the course of mankind and its world civilizations, and more specifically tourism.

Conversely, in this study, we will fully engage with one of the world’s present great challenges – we will investigate Peak Oil and boldly consider its imminent dramatic effects on the supply of energy, and the implications for society and tourism.

PEAK OIL THEORY

Dr King Hubbert, a Shell Oil geophysicist in America, developed the Peak Oil theory. He predicted that oil production in an “oil field” (which may be variously defined according to different levels of scale), will have increasing rates of production, until the production levels off at peak production point, when half of the available oil has been extracted.

Figure 1 Peak Oil Curve



After peak oil production, the second half of the available oil's production will fall increasingly quickly, until it levels off to exhaustion point. Considerable attention was given to Hubbert as he correctly predicted that the US would reach Peak Oil in 1970 (Leigh. 2008, p. 15). His theory is typically known as Peak Oil and is shown in the graph below:

THE REALITY OF PEAK OIL?

Many voices are increasingly warning that we have reached the era of Peak Oil now. Although not universally accepted, many facts do indicate that we are now rapidly approaching Peak Oil, or are already at the beginning of the phenomenon now. For example, as shown in the table below, conventional crude oil production worldwide declined from a peak of 73.81 million barrels per day (mbpd) in 2005 through 2007 at 73.27 mbpd, but re-peaked slightly at 74.48 mbpd in 2008 – hardly lifting off the bumpy plateau with an increase of less than 1% above the 2005 year:

Table 2 Oil Production

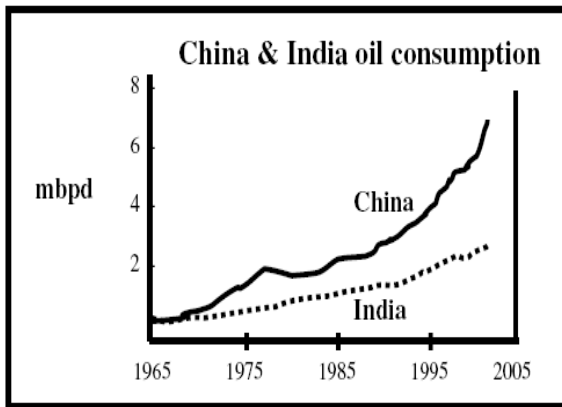
Worldwide Crude Oil Production	
Year	Production (mbpd)
2005	73.81
2006	73.54
2007	73.27
2008	74.48
(EIA; The Oil Drum, 2008)	

However, this flat production level of world crude oil confronted increasing high levels of world crude oil demand due to high levels of economic development in less developed countries like China and India, both growing at around 9% annually. Also, the maintenance of a high level of economic development in more slowly growing, already developed economies, like in Europe and the US, has continued the ongoing high demand for crude oil.

Both Europe and the US have to import more than half their petroleum needs. In China alone the daily consumption has increased from 3.4 mbpd to 6.7 mbpd, a massive increase of approaching 100 % in the years 1995 to 2004. China alone consumed almost 13% of the world's total oil production in 2004. Similar trends in oil demand have occurred

and are projected for India, although not from the same high base level. Even so China and India together in 2004 consumed a massive amount of about 18% of the world oil supply (Leigh, 2008, p 16). The chart below from Stanford (2005) shows the historic continuing increase in demand for oil, in China and India, to fire up their impressive economic development.

Figure 2 China and India Oil Consumption



It has been estimated that the extra oil supply equivalent to three Saudi Arabias will have to come on tap by 2030 just to keep pace with world demand (Landers, 2007). This extra supply doesn't appear to be remotely possible to be achieved.

The following table of peaks and troughs of oil price tend to bear out the assertion that it was the market forces pushed oil prices up dramatically in the early third millennium:

The table above shows the average yearly price for crude oil rose 225% from 1984 to 2008, but most of that increase actually occurred in the last seven years since 2002. Crude's recent rising prices, far beyond inflation, would suggest that the markets were anxious in the last few years, possibly due to world economic forces of rising demand confronting flat production levels. However, the collapsing price of oil since July 2008, when it reached \$147 bbl, to the February price of \$31 bbl in 2009, shocked most of the world with an oil price freefall of almost 80%.

Total world production of all oils, both conventional and nonconventional, at present, is around 85 mbpd, and included in this is the total world production of conventional oil of around 74 mbpd. Obviously a shortfall of 11 mbpd is made up by the nonconventional oils. These nonconventional oils are much more expensive and probably require a price of around \$100 bbl for their industrial sector to be attractively viable on an economic basis.

Table 3 Crude Peaks/Troughs Price

Crude Peaks/Troughs: Yearly Average Price		
Year	Price \$	% Change
1984	28	
1988	15	- 46
1990	23	+ 53
1994	16	- 30
1996	20	+ 25
1998	12	- 40
2000	27	+ 125
2002	23	- 15
2008	91	+ 296
2009 Feb	31	- 66
(Richards, 2009)		

If we consider that worldwide oil discoveries have been less than annual production since 1980 (Zinkler and Schindler, 2007, pp. 7, 8), and that the world demand for oil is increasingly met by nonconventional oil, we could expect to see prices eventually up well over \$100 bbl.

In this overall context of world oil production and supply, we could have expected to see oil prices stubbornly maintain high altitudes. So many have asked why such a dramatic collapse in the price of crude oil? Three main factors largely account for this price drop:

1. The recent decreasing demand for crude as the economic decline diffuses worldwide from the USA
2. A mass exodus of speculators, since July 2008, from derivatives and leveraged funds in oil, when its price levels began to be very uncertain and even seemingly erratic

The third factor is explained by the following theory:

3. The Queueing Theory (or Hog Theory)

Robert Hirsch and his associates stated that as Peak Oil “is approached, liquid fuel prices and price volatility will increase dramatically” (2005, p. 4). Likewise Defeyyes (2008) suggests:

“[The] queueing theory predicts that queues behave in a noisy and chaotic manner when demands approach the system capacity. ... Instead of energy prices rising to a new stable level, wild price oscillations will result from short-term changes in demand. There will be a tendency, the first time that prices go down, to announce that the crisis is over and oil and gas are now cheap and abundant again.”

So falling oil prices may not indicate a newly settled oil market, but a looming unpredictable transition period, with a sequence of price gyrations heralding peak oil, and therefore oil scarcity, so that eventually high prices will permanently settle in.

THE DANGERS OF PEAK OIL

Many have sighed in relief because of cheap oil – But cheap oil may be dangerous. Many oil maintenance, development and exploration projects have been shelved or cancelled altogether. This will inevitably lead to imminent renewed unprecedented shortages – we will have less oil supply than we had originally thought. This oil shortage, far worse than we at first anticipated, will be greatly felt when world economic development picks up again, leading to new price spikes when oil could go to \$150 bbl and far far beyond?

Matt Simmons, acknowledged analyst and author on Peak Oil, recently warned:

"We are three, six, maybe nine months away from a price shock. We are not talking about three to five years away – it will be much sooner. These prices now are dangerously low. The lower prices fall, the less oil will be produced and the greater the chance of an oil spike." (Johnson, 2009).

Oil could be so scarce – some nations (e.g. USA and EU) may not be able to buy it as the sellers, like Islamic OPEC (Organization of the Petroleum Exporting Countries), use their “petropower” as a political and economic weapon in pursuit of their foreign policy. Already the use of this petropower by OPEC has been discussed a couple of times, when they considered not selling their oil to countries whose foreign policy does not fit with their own political agenda, as in the case of nations that are supportive to Israel.

SOME OIL FACTS – SCARCE AND COSTLY

World energy production per capita has been declining for 30 years, since 1979 (Duncan, 2006), and world surplus oil production capacity has been declining since 2001. The current surplus is down to around 1 mbpd from over 5 mbpd. And this declining surplus should not come as a surprise as crude oil production has generally been declining since 2005. This is largely because we have not developed new facilities, and our exploration has found less and less oil to replace what we are using. Congruent with these trends, 60 of the world's 98 oil producing nations are already beyond Peak Oil and so have declining output, with some declining at a dramatic pace (Market Oracle, 2008; Williams, 2007).

According to Yeoman et al (2007, p. 1354), if our governments and societies fail to make effective responses promptly to the sagging supply of oil, we will be unprepared for the sudden period of economic shocks, political instability and pollution problems. They also make the point that there is no real alternative for fossil fuels (including oil) as we have not developed alternative technologies or infrastructured them into our societies. But they do make the suggestion that “Rising oil prices are ... a positive feature, [eventually] driving innovation and technologies, which will become more economic as oil prices [continue to] rise”.

We also need to consider that increasing amounts of oils produced are non-conventional oil, either because of source (e.g. bio-oils from corn), or due to the high cost of extraction like with offshore and deep oil. Oil price under around \$100 bbl means that many industries in the non-conventional oil sector are not attractive or even viable anymore, at least not until the current oil price picks up again.

So our future affair with crude oil may be within an overall trend of declining supply and rising demand, with volatility of prices from the anxiety of the market in which demand surges higher over supply. But the prices will be intermittently buffeted up and down by the fluctuations of economic growth and its levels of fluctuating demand for oil. Also as

investing speculators vie for advantage, they too will aggravate the fluctuating price divergences. However, this will likely occur within the overarching general trend of oil scarcity and higher prices.

No only will Peak Oil lead to crude oil scarcity, but the knock-on effect to other energy resources will be dramatic as they too will dwindle in supply. This is not generally understood and even some specialists in the area are in denial over this.

Upon reflection it is clear that crude oil is the progenitor of other energy resources. Without crude oil and its byproducts we would not have petrol and diesel to use the heavy machinery, or vehicles (trucks, trains and ships), to mine and transport these other resources like coal, uranium ore, or even gas. Obviously this would have serious implications for the maintenance of all human activities in our energy hungry economically developed societies.

NATURE OF THE OIL SHORTFALL PROBLEM

The exact nature of the problem is that not only may we have dwindling supplies in the face of growing demand, leading to escalating prices, but also eventually we will stop extracting oil from the ground altogether, if the net energy return is not worth it. For example, when the oil is so deep or difficult to extract, that it takes one barrel of oil to extract say one or two barrels (or even worse), it is obvious that there is no net gain worth the effort. Actually oil becomes unavailable and “exhausted” before there is no oil left – the “exhaustion” point is when it is no longer worth it to spend the energy to get so little back.

Moreover, the following quote highlights that there are no easy oil substitutes:

“Alternative energy sources have their problematic issues. Nuclear fission supporters have never found a noncontroversial solution for disposing of long-lived radioactive wastes, and concerns over liability and capital costs are scaring utility companies off. Renewable energy sources are diffuse, making it difficult and expensive to corral enough power from them at cheap prices.” (Kerr and Service, 2005).

As an example of the absolute inability of alternative energy to replace the present energy production level of oil, Odum (1996) cites the

case of solar energy with the fact that “the U.S.A. is presently using fossil fuels more than 100 times greater than the total absorption of solar radiation across the entire USA”. Further, calculations show that the production and installation of solar photovoltaic cells consume twice as much energy as they produce. So even if all the energy produced was put back into production, then one could build only half as many cells each generation – obviously solar cell technology is not sustainable. Even if the efficiency of solar cells doubled, all of the energy produced would have to be used to manufacture new cells, which would still bequeath a zero net benefit to society (Hanson, 2001). Actually, even though not generally realized, such failing net energy figures apply to various alternatives to conventional oil. In that sense many energy technologies that we think are sustainable, are not really.

NO READY ALTERNATIVE

In reality, no other energy source can be comprehensively substituted for cheap readily available oil. Any use of alternative energy fuels can only partly and minimally make up for the possible looming oil supply shortfall. No other transportable and versatile energy resource is as energy dense as oil. Nuclear energy, not only is dangerous because of the possibility of industrial accident or terrorism, but it can only minimally fill the gap for a few short decades, before it is spent, and the unwieldy hazardous waste problem will be left with us for thousands of years. Other alternative fuel technologies have serious shortcomings with one or a combination of the following factors:

- Massive environmental degradation or large volumes of waste material on site (oil sands, shale oil, hydroelectric up- and downstream).
- Dangerous waste disposal problem after fuel is spent (nuclear).
- In need of much more technological development to be fully viable (solar, wind, wave, tidal, ocean thermal, hydrogen).
- Only for public electricity production (coal, nuclear, geothermal, hydroelectric, wave, tidal, ocean thermal).
- Only appropriate for some few limited sites (oil sands, shale oil, tidal, hydroelectric, geothermal, wind, wave).
- Subject to depletion or unsustainable technology (conventional fossil fuels, oil sands, shale oil, nuclear, geothermal may decline in effectiveness, hydroelectric silts up, solar has negative net energy).

- Terrorism (nuclear material used for construction of nuclear weapons; and the possibility of an attack on reactor sites, or storage or waste storage sites)
- Environmental pollutant (all fossil fuels and especially coal).
- Low net energy (amount of energy or fuel needed to produce the final amount of energy), or even negative net energy, and therefore affects how expensive the final fuel produced is. Obviously any technology with very low or negative net energy is not sustainable. It may be that some of the alternative fuel technologies, in this vein, are really unsustainable, in spite of popular wisdom (oil sands, liquid coal, shale oil, biomass, solar, hydrogen).
- Directly competes with resources for much needed food production. For example, the land is taken from food production, and the plant product itself is not used for food, but to produce ethanol (biomass).

To bring many of the above points together, in the following table, the various characteristic advantages and disadvantages of energy resources are listed in summary (Leigh, 2008, pp. 19-20):

The following points (PeakEngineer, 2007) help towards a distillation of the current status quo concerning alternative energy and oil production:

- Within the lifetime of our industrial civilization extractable oil is dwindling and finite
- As the demand for oil exceeds supply some nations may go without
- Petroleum products have highest energy density
- Critical economic repercussions will accrue from rising energy prices
- Alternative energy sources have lower net energy and are more expensive per energy unit
- Replacing oil based infrastructures has a long lead time, and involves high expenditure and energy consumption

These points in themselves may not be insurmountable problems, but are still a massive challenge for any sizeable transition to alternative fuels. So alternative fuels may be workable to some limited extent, but would require global sacrifice and cooperation on a permanent basis, to a degree that would revolutionize and simplify our lifestyle, and so require much less energy. There is nothing to suggest that is possible in the foreseeable future.

Table 4 Characteristics of Energy Resources

Characteristics of Energy Resources							
Fuel	Renew	Low net energy	Waste/danger	Only Public power	Vehicles	Other problems	Few sites
Oil sands		✓	✓W		✓	✓Degrades Environment	✓
Gas					✓	✓Total energy reserve less than coal	
Coal		✓Liquid		✓	✓Liquid	✓Pollutant	
Shale oil		✓	✓W		✓	✓Degrades environment	✓
Nuclear			✓W D	✓		✓Terrorism	
Geothermal	✓			✓		✓Decline	✓
Biomass		✓			✓	✓Food competitor	
Hydroelectric	Silts up			✓		✓Up & down stream degrades environment	✓
Solar		✓			✓	✓Batteries	
Wind	✓					✓Batteries	✓
Wave	✓			✓		✓Development	✓
Tidal	✓			✓		✓Development	✓
Ocean Thermal	✓			✓		✓Development	
Hydrogen		✓			✓	✓Development	

Obviously, the world does not, at present, have the oil resources and infrastructures to readily support growing universal economic development as humans have grown accustomed to or expect with anticipation in the future. And even if the world had the oil resources and infrastructures, the escalating waste and pollution are huge problems, which would make the planet dangerous for life, and eventually virtually uninhabitable.

NEW SOCIETY

We must be clear on one thing. Peak Oil is about to force a new society, whether we like it or not. And that society must be compatible with the new environmental circumstances – an end to the plentiful supply of cheap energy to fire up machine-based industrial civilization.

Mankind needs to drastically reduce its required energy levels. The future society will have to be clustered into local communities, and as much as possible be self-contained and self-sufficient, with agricultural based economies, but not excluding, for example, local industry, services and shops. This decentralized society, with localized, largely self-sufficient communities, will automatically drastically reduce personal travel, packaging and transport for products, all amounting to great savings on energy requirements.

It should not be underestimated that a whole new mindset will be required in such a locally organized and largely self-sufficient community.

However, this by itself would not be enough if we want to have a relatively high standard of living with comfort something like mankind enjoys in the 21st century. Various other changes in the daily behavior of citizens will be required in what we do and how we do it.

In this new society alternatives will have to be found for activities that once required large doses of energy. A quality of life is workable in post oil, but the orientation and values of mankind will have to undergo a serious change, even to the extent of a metamorphosis. A lifestyle in complete harmony with the physical laws surrounding us will actually mean many will be healthier and not in need of much medical attention at all. Emphasis will have to be placed on sharing and cooperation, to replace competition and strife, for the new low energy localized self-contained communities to work well in an unconflicted social environment.

It may not be a matter of whether we want to go this way or whether this is the lifestyle we want – there may be no choice! Actually the quality of human life and enrichment, it can be envisioned, will be even higher than we have now in both the rich and poorer countries of this present world.

Looming oil depletion trumpets the end of the industrial civilization and life as we know it. Classical economic development ideas and principles, largely dependent of cheap oil and energy supplies, will soon be largely historic artifacts. A whole new approach and mindset is needed for a new society which will afford worldwide a quality and sustainable life. We will all need to embrace this new opportunity for a social community, living with harmonious behaviour within sustainable circumstances.

IMPLICATIONS FOR TOURISM

The fantastically fantasized vision of ever-expanding development, wealth, technology and tourism for us to “travel around strapped to [an] atomic jet pack” or that we would be able to enjoy extravagant holidays, for example, partying “over a glass of rare Himalayan whisky served by a floating robot waiter in a geo-stationary luxury resort 100 miles above Africa” is still purely fantasy (Highland Business Research).

In this same vein, in the promotion of Ian Yeoman’s latest book “Tomorrow’s Tourist: Scenarios and Trends” (2008b) we read:

“[H]olidays in Outer Space will be the ultimate luxury experience ... embedded technologies will be the norm in future tourists ...

“In 1950, 25 million consumers took an international holiday and by 2005 this figure had risen to 803 million. By 2030, it is forecasted that this figure will reach 1.9 billion international arrivals, spending US \$2 trillion with US \$5 billion being spent by international tourists every day across the world, from US \$2 billion in Europe to US \$1.5 billion in Asia.”

Considering the newly emerging worldwide post-energy and post-oil societal changes and constraints, this high level of tourism hardly seems likely to appear.

Richard Heinberg, American academic and author of several books on Peak Oil, has been warning of its dramatic and sobering societal effects which include tourism. For years oil depletion analysts have been describing a consistent scenario that goes as follows. Sometime in the next few years, or even possibly starting around now, growing decline rates in oil production, from existing oilfields, will overwhelm new production streams coming online. Surely the price of oil will rise dramatically, and when it does, it will cripple transport, the airline industry and tourism – actually the whole economy. We could then expect a serious recession, with reduced demand for oil (and other things). The oil price will temporarily drop in response. Then, as oil production declines further, the price will resume its generally upward but gyrating trend (Heinberg, 2008). Heinberg actually predicts in his seminal book, “The Party’s Over ...” that the airline industry, as we know it today, will

not survive, and be drastically reduced in scale and function, and “tourism will languish in the decades ahead” (2005, p. 193).

The following seems extreme, but it may prompt us to consider the dramatic imminent challenge of Peak Oil:

“Travel and tourism depend on cheap oil for their profits. Through oil, consumers drive, fly, and take cruise ships for vacations. When oil shortages increase, so will prices for gasoline, airfare, and vacations on cruise liners. In the future, only the elite will utilize air travel and vacations on cruise liners. Remote locations will be holiday spots for exclusive individuals who can afford obscene prices for transportation. The middle classes will take more holidays in their own local area where it will be affordable. Eventually, there will be no oil left even for the elite minority and the only way to travel would be by means not dependant on oil.” (ProgressiveU, 2006).

The World Travel and Tourism Council (WTTC) has expressed specific concern that the long term implications of resource depletion are extremely serious. For example, in the next few years the travel and tourism industry may find that higher fuel prices could lead to operational price increases and corresponding decreases in the number of travelers in this price-sensitive market (WTO, 1993).

Goeldner and Ritchie (2006, pp. 464, 465) express an interesting observation: “Existing patterns of economic activity [including travel and tourism], and the global consumption and pollution of natural resources, are not sustainable at current levels.” And of course “... we cannot continue to exploit the global environment like we have in the past.” It is also highly topical that they also suggest: “The use of nonrenewable petroleum is perhaps the best single example [that] tourism depends heavily on the fuel that is burned to transport travelers both around the block and around the world. ... any policies that affect the use of petroleum-based fuels will affect the tourism sector.”

The following caution from Ringbeck et al (2009, p. 46) may also be topical for our present anticipation of future challenges in travel and tourism:

“... oil market fundamentals suggest a mid to long-term oil price of US\$100 per barrel or more, which will impose a fundamental structural change on the Travel and Tourism sector – especially the airline industry. ... [S]truggling with eroded profit margins, airlines clearly need to pass [any future] oil price increases on to their customers in order to stay in business. Increased “access” costs endanger destinations [P]olicymakers face severe challenges in [maintaining the viability of] Travel & Tourism ...”

The problem is that travel and tourism, obviously as the world's biggest industry, is a voracious consumer of prodigious amounts energy and oil. This is borne out when we consider that travel and tourism's CO² emissions – including from transport, accommodation and activities – were estimated to be around 5 per cent of world CO² emissions in 2005 (UN News Centre, 2008). That means that a significant one twentieth of world emissions is a “fallout” from travel and tourism. And of course these figures show overall that the industry is a major consumer of energy.

THE PRESENT DECLINE TREND

Susanne Becken (2007), of Lincoln University (NZ), says that oil should be of great concern to tourism for the following reasons:

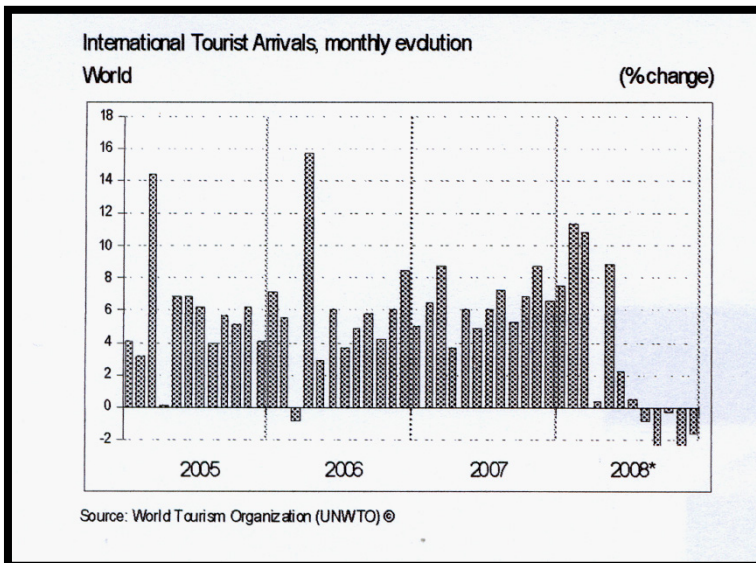
- Oil scarcity and lack of alternatives, for example, for aviation and other transport, will lead to higher prices for travel and thus a lower demand for tourism.
- In an extreme scenario for oil depletion, oil will only be available for life supporting services. Tourism (often treated as luxury or discretionary spending) will not be a priority in oil allocation.
- A transition to less oil-hungry tourism is inevitable.

Already the recent hefty oil price, along with the economic decline, is having effect. The UNWTO (World Tourism Organization) confirms a rapid slowdown of international tourism growth since mid 2008, reflecting the impact of rising oil prices at the beginning of the year, and the deterioration of the economic situation, as well as of consumer confidence of recent months. The following points were made in a press release (WTO, 2009):

- In 2008, international tourist arrivals barely reached 924 million, up only 16 million over 2007, representing a disappointing annual declined growth of only 2%.
- Tourism demand slowed significantly through the year under the influence of an extremely volatile world economy (financial crisis, commodity and oil price rises, and sharp exchange rate fluctuations), undermining both consumer and business confidence and resulting in the current global economic recession.
- The second half of 2008 saw growth come to a standstill with the number of international arrivals declining – a trend which is expected to continue in 2009.

More specific arrival details, in the graph below, show that the uneasy trend in early 2008 led to significant declines (actually drastic collapses) – to negative growth rate changes, declining to over minus 2%, in the last five months of 2008 (UNWTO World Tourism Barometer, 2009, p. 6).

Figure 3 International Tourism Arrivals



The Barometer (2009, p. 6) goes on to say that "The global situation was understandably the main focus of attention in 2008, with the financial crisis and economic crisis (including the credit crunch, high oil prices for much of the year, and volatile commodity and currency markets) being the main factor influencing tourism trends". And in 2009 a stagnating or declining trend is expected to continue.

The WTTC (World Travel and Tourism Council) (2009) has already noted the impact on tourism from present economic decline:

"This year, the task of assessing Travel & Tourism trends and drawing up forecasts has been more challenging than ever because of all the uncertainties," Jean-Claude Baumgarten, WTTC President & CEO, announced ...

"Given the significant deterioration in Travel & Tourism activity through the second half of 2008 and the bleak macroeconomic forecast for 2009, WTTC's latest research shows that Travel & Tourism Economy GDP will contract by 3.6% in 2009. And it is expected to remain weak in 2010 with only marginal growth, of less than 0.3%, currently predicted - on what will already be a weak 2009."

THE NEW TOURISM

Tourism functions as a human activity within the overall society. For example, economic development in the last fifty years, built upon cheap energy, has brought forth a consumeristic society with machinery, technology, services, wealth, paid holidays, and an inquisitive attitude for exotic adventure, fuelled by information technology and the entertainment industry. Many of these largely post World War Two societal characteristics will be curtailed and rechanneled into new more frugal activities due to generally less wealth and higher prices.

Tourism will eventually have to be modified to fit within society's new context – the lifestyle and limits of that society.

With the combined trends of more scarce oil and more expensive oil, there will be significant knock-on effects for all human activities, with many goods and services increasingly scarce and more expensive. Those activities with the greatest need for high levels of energy input will be hit

the hardest. Our present living style, requiring high doses of energy may be about to change. And our present style of tourism uses prodigious amounts of energy, and so will be hard hit in the post-energy era. Tourism will have to become much leaner in its use of energy and particularly oil.

Such suggestions, of touristic behaviour change in challenging circumstances, are borne out by the findings of Steinnes (1988, p. 39) who found, in a regression model analysis, that tourism expenditures and behaviour are significantly related to gasoline prices.

What may be some of the specific changes we can anticipate for tourism of a new nature and scale? The following points are based on the assumptions that oil (and energy) will be scarce and expensive, even in an emerging world if it could be without dramatic geopolitical conflicts or natural catastrophes. However, worsening geopolitical conflicts and natural catastrophes could greatly exacerbate the problems to be confronted by the tourist industry.

In this looming touristic context we could expect to see the following factors emerge to make dramatic changes in the industry:

1. Any tourism types with large energy doses will be very expensive and scarce. While there may be esoteric luxurious facilities for the superrich who will be able to afford air travel, for most people air travel and sumptuous holiday facilities will be out of reach.
2. Energy guzzling air travel will be greatly curtailed due to its high cost, and so only available for those with big budgets.
3. Most people will use efficient popular transport modes of train and bus, and ships for intercontinental travel, although sea travel may be quite expensive too.
4. There will be a high demand for local tourism. For the majority a holiday, for example, at a local beach or mountain resort (including forest or seaside camping) could be in reach.
5. Popular tourism will have to be simpler, less luxurious and more localized, to cut down on the total price and expensive consumption.
6. This means generally that there could be a great opportunity for sustainable tourism to become more serious and real, beyond lip service and window dressing.
7. Mass highly commercialized tourism will decline – smaller localized industry will (re)appear.
8. Generally people will travel less, and enjoy tourism with simpler cheaper requirements.

9. There may be a revival for the true soul of tourism, hospitality, to begin to overshadow and replace amenities, which became the main focus in luxurious consumption-oriented tourism of the recent energy hungry decades.

LOOKING BACK TO THE FUTURE

We have seen that mass international tourism is a novel phenomenon dating back to its beginnings in the 1960s, with the introduction of the Boeing 707, making possible quick, comfortable, safe and affordable intercontinental travel on a grand scale.

With the Boeing 707 travel times to intercontinental destinations were drastically reduced. For example to fly from London to New York in 1949 took 18 hours of flying time, and at least one transfer in the Atlantic. Totally from London takeoff to New York landing could take much more than a whole day. With present services, takeoff to landing, with no transfers, but a direct flight, takes about 7 hours. And the cost in 1949, was in real terms, about eight to ten times the current price (Goeldner and Ritchie, 2006, pp. 66, 67). Even more, to cross the Atlantic on the first flight in 1939, cost the passenger the equivalent of a staggering \$75,000 in today's money values (Yeoman, 2008a, p. 233).

Hall (2005, p.37) suggests that tourists, after 1960, have greatly benefited from the introduction of new transport technologies, which have been developed to satisfy the rise in the demand for travel:

“The cost and time of moving commodities, services and people have dramatically reduced in recent years. The [real] cost of travelling internationally has fallen sharply, as has the time it takes to travel long distances ...”

However, before the 1960s few travelled internationally across the seas and most travel and tourism was through road, rail or ship. Much tourism tended to be “staycation”, within the local region or state scale of a nation. It was relatively easy for Europeans to travel internationally, as for them it was literally “just down the road”. Elsewhere, there was little international touristic travel until the era of mass international tourism.

Staycation has often meant different things to different people, but it is used here as a holiday within the locale or vicinity of one's residence. It may mean returning home every night, from sightseeing or other activities requiring trips, or staying for extended periods away from home, but

within probably a maximum of a few hours drive away. This type of vacation probably does not require air or sea travel, but could include road (car or bus) or rail travel.

So just what was the typical holiday like in the period just after World War Two?

A typical holiday in the more developed countries in the 1950s and 1960s was a camping or caravanning holiday at the seaside or in mountains, or possibly at these same venues with built accommodation in hotels, chalets or cabins.

Lohmann and Danielsson (2004, p. 15) suggest that unexpected events will always cause confusion in travel and tourism. However, it is still “important (and possible) to prepare oneself for the trends that can be identified with some reliability today. This can be the starting point for the next challenge ... It is not enough to know the trends [only]; but this knowledge must be transferred into products and strategies for destinations and companies.”

The present recession it appears may be re-shaping the way we take holidays, at least for the British. Money worries are forcing one third of people to holiday nearer to home and even one in ten are giving up their annual break altogether, according to a poll this week by the Environmental Transport Association (ETA). Trips abroad, for the British, are being replaced by holidays in Britain, and we see a revival of old-fashioned pursuits; camping and cycle touring are reported to be at a record. A spokesperson for ETA said “Most people who enjoyed cycling and camping trips in the 1950s could not afford to fly – as with many of today’s recession-hit holidaymakers, they [are changing their holidaying behaviour] by accident rather than design.” (ETA, 2009).

That just may be the harbinger of more of what is to come, as we return to what we used to do, a few decades ago, just after World War Two.

CONCLUDING CONSIDERATIONS

We are probably in the early stages of Peak Oil beginning to play out – with declining supplies of crude (and possibly with increasing use of alternative oils) leading to permanent (and yet erratic) price increases. And yet periods of cheap oil may lull the world to think the problems of oil and energy supply are over.

The present recession shows that levels of economic growth, or decline, can also affect demand for oil and its price. But surely the overall

trend will be increasingly scarce oil and energy, and rising prices. This will erode established wealth and eventually forge a new society.

A brief blip on the historical radar is about to change. Mass international tourism has come and will leave. This “universal” tourism is a recent post World War Two phenomenon, and blossomed upon technological development, with the introduction of jet airliners, and cheap energy supplies, to really grow at a spectacular rate since 1960. However, it looks like the reality of world Peak Oil is occurring about now. Dwindling supplies of oil, and therefore of energy in general, will bring the world to a post-energy era, with increasing energy scarcity and more expensive goods and services.

Society must undergo dramatic change to be less dependent on abundant cheap supplies of energy and oil. Society will be more frugal in its energy use, and tending to be localized in self sufficient agricultural-based communities. Energy will be scarce and much more expensive. In this context, tourism will also change to fit with the new society and the constrictions placed upon it.

The new tourism will be largely “back to the future”. Typically travel and tourism will be relatively local, involving much less travel (and mostly by road, rail or ship), in facilities that are much more frugal, where the full measure of hospitality may blossom without the abundant supply of sumptuous amenities. This may be a golden era for more frugal tourism, of a new type, in which hospitality becomes central.

We can start planning now so the transition to this new world tourism will be relatively easy and comfortable. As was recently suggested in a conference, “those who harmonize with the trends, get on top of future history, before it gets on top of them” (Leigh, 2009).

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