

## **Memorandum from Bluespace Thinking Ltd (TE 07)**

The Select Committee for Transport (The Select Committee) ask whether conditions have materially changed since The Eddington Transport Study, December 2006 and what the priorities for transport should now be, in order to deliver growth, both nationally and regionally.

The Eddington report, published in 2006, is based predominantly on 1990-2004 studies and data. [1]

### **1 Summary**

- 1.1 Our principle finding is that the current methods of analysing and prioritising projects are not sound. The processes are over detailed and the guidance is based on very old data both for forecasting demand and evaluating benefits. The methods and assumptions used have a systematic bias towards long term, long distance, high risk, capital projects. The flaws in the analysis are evident by the application of degree level mathematics/statistics.
- 1.2 Domestic travel growth since 2000 has been less than predicted. The UK is reaching a per person travel saturation point consistent with the experience of other European countries. The impact of the internet, communication technologies and low cost international air fares have reduced the demand for domestic travel/person below that anticipated in the Eddington study.
- 1.3 The UK economy has grown 16% in real terms since 2000. The growth has been in education, health, property and financial intermediation. These areas of the economy are not significant transportation users and there is little evidence of an economy trickle down effect to or from transportation. Manufacturing and agriculture have declined since 2000 impacting employment and economic growth in the regions.
- 1.4 The recession has resulted in reduced commuting and leisure travel but has not altered the longer term priorities. The Eddington study and the subsequent 2007 DfT Transport Strategy recommend that transportation spending focus on the improvement of existing networks to reduce congestion. These recommendations remain valid.
- 1.5 The HS2 High Speed Rail proposal provides a case study that shows the shortcomings in the evaluation and decision making system. Failure to predefine the problem and to develop full strategic alternatives for evaluation are major issues of process. Use of old data and failure to accurately understand and model demand are issues that have fundamentally flawed the analysis of HS2 and possibly other “strategic” projects.
- 1.6 Intense political lobbying prior to analytical evaluation results in substantial miss-information in the public domain concerning travel demand and environmental impacts. These problems are highlighted in the HS2 proposals.

### **2 The Economy, Employment and Poverty**

- 2.1 From 2000 to 2009 UK GVA (Gross Value Added - the difference between output and consumption for any given industry or sector)) had increased by 16% in real terms to £1260 billion. The growth has come from public administration, defence, education and health (£41 billion), construction, property, rents & related activities (£59 billion) and financial intermediation (£47 billion). In the same period manufacturing and agriculture declined by £50 billion. [2]
- 2.2 Employment over this period increased by 3% to 30.8 million with a peak of 31.7 million in 2008 [3]. The overall economic and employment improvement that had occurred to 2008 hides the fact that the 50% lowest income families had actually reduced after tax spending power in real terms. The wealth gap between the highest 20% and the lowest 20% has widened continuing to leave in poverty approximately 37% of children in the UK. [40] [41]

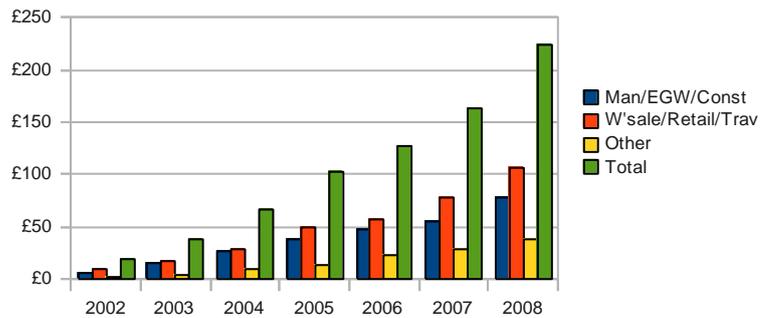
### 3 The Internet

3.1 UK sales of none financial goods and services over the internet have increased since 2000 to £223 billion in 2008 or 10% of relevant sales. Total ICT sales were £315 billion. [ 5]

3.2 As well as sales, the internet and other ICTs (Information and communication technologies) impact the extent and effectiveness of peoples travel. As examples mobile phones allow routes to be changed immediately in response to changed circumstances and sat navs help travellers avoid congested areas caused by accidents and other events.

3.3 In 1998 the government recognised that “E-commerce has a huge impact on the way we do business”. Reduction of travel is a significant part of the improved efficiency predicted, the use of ICT has the potential to further reduce travel. It also changes freight travel patterns, with goods ordered over the internet HGV deliveries to retail shops are reduced in favour of direct van based deliveries from manufacturer or distributor to the customer.

Internet Sales £bn/year 2002 -2008  
Data ONS Graph Bluespace Thinking



### 4 Transportation

4.1 Although there has been overall economic growth the impact on transportation demand caused by the the internet and other changes can be seen by the decline in shopping, commuting and business travel/person which have reduced by about 16% /person since 2000 [7].

4.2 Leisure travel, (day trips, holidays and entertainment) has increased by 20% since 2000 [7] however the biggest impact of leisure travel is a redistribution of wealth. In 2009 the UK received £16.5bn from 30 million international visitors but during 69 million UK trips abroad we spent £32bn, a deficit of £15.5 million [8]. Redistribution also occurs in the UK, based on Transport for London figures the number of domestic overnight visitor to London have reduced from 18.5 to 11 million from 2000 to 2006 but they still spent £2.2 billion in London rather than in their home location or other regions [9].

Decline in trips/year 2000 - 2009

Data ONS/DfT Graph Bluespace Thinking

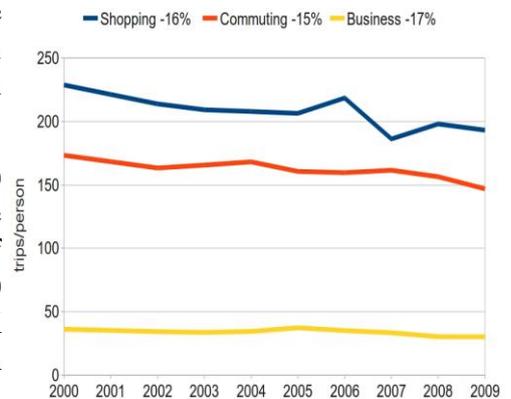


Figure 2

4.3 Since 1995 there has been a 15% decline in the percentage of driving license holders under 30 [4]. The cost of learning to drive, insurance and car ownership may be prohibitive for those from less wealthy families. For those living in areas without good public transport this is a significant obstacle to gaining employment, perpetuating a downward cycle.

4.4 In the regions, local bus transport has reduced by an average of about 12% since 1995 with greater reductions in rural areas [7]. Generally the cost of public transport has risen at or above RPI so the cost of transport to work is a higher proportion of after tax income for those from less well off households. At the same time rail subsidy has continued to increase for those in the highest 10% income households to be almost 5 times that received by the lowest 10% .[40]

4.5 The recent budget with the increase in tax and NI thresholds along with a reduction in benefits is an attempt to encourage fuller employment. As well as employment opportunities ease of getting to work is important. Commuting congestion, car sharing/pooling and access to low cost public transport are the transportation aspects that will contribute to reduce the wealth gap and help grow the economy.

## 5 Travel forecasting

- 5.1 Eddington and other mode/project specific DfT studies predict future travel growth by extrapolating from the past using elasticities primarily linked to GDP [10]. These are misleading at higher levels of GDP/capita because travel saturation /person occurs. One reason for saturation is the time people have available for travel and the activity at the end of the travel. ONS studies in 2005 show average UK time spent away from home was already 27% [11].

UK Travel cumulative passenger km % growth 1952 -2009  
Data ONS/DfT Graph Bluespace Thinking

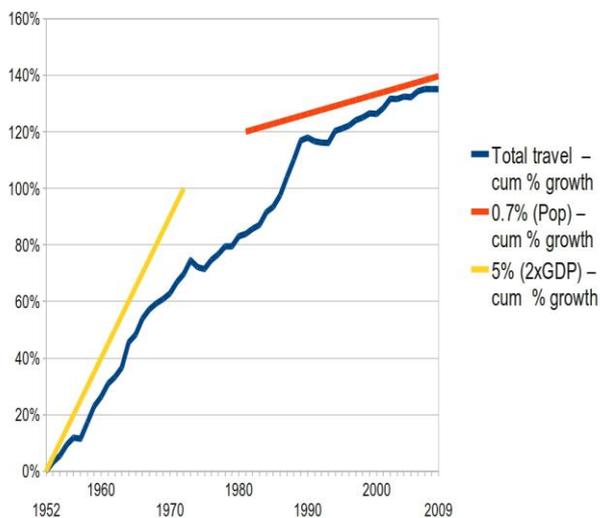


Figure 3

- 5.2 This saturation eventually limits transportation growth to the level of population increase. The ONS predict that between 2009 and 2030 UK population will increase by 17% however due to ageing profile the working age population will increase by 14% [12]. On average working age individuals travel 8500 miles/year while others travel 4500 miles. [7]

- 5.3 UK travel saturation can be seen by plotting the rate of increase in total domestic travel distance from 1952. At the start of the period travel increased at twice the rate of GDP but declines to about the rate of population increase in recent years. [13]

- 5.4 Long distance travel would also appear to have saturated. The 2009 DfT National Travel Survey [7] shows that trips/person over 50 miles (strategic routes) have not increased since 1995, average long distance trips over

100 miles have remained at 7 to 8 /person/year dropping to 6 in 2009.

- 5.5 This travel saturation along with the internet has resulted in the growth predicted in the Eddington report not being met.
- 5.6 For cars Eddington predicted 28% growth (2003 -2025), the actual growth to 2009 has been 0.9% and based on DfT 2007 high level predictions will rise by a further 10% by 2025. The air increase of about 100-120% is also not being met, domestic air travel peaked in 2005 pre recession, it has since started to decline, it is currently 18% below the 2003 level. [1][16][17]
- 5.7 Growth in inter urban trains has exceeded the Eddington forecasts, not as a result of economic growth but as a result of significant improvements in service and passengers switching from long distance coach, car and air. However the growth is mode shift, and annual growth rates will probably revert to increases at or below those predicted by Eddington. [18][19]
- 5.8 In 2007 the DfT predicted that total travel growth would be 0.4%/year for the number of journeys and 0.7% /year for distance travelled, these forecasts are consistent with the ONS population growth forecasts and set a reasonable, evidence based, overall boundary within which to plan long term projects and consider the impact of inter modal shift. [20]

## 6 National and Regional priorities

- 6.1 The economic and employment changes since the Eddington report make the recommendations more relevant not less. Transport priorities flow from a view of how to regenerate economic growth. Increasing employment, increasing exports, and reducing imports are the key imperatives.
- 6.2 The UK has a very good transportation infrastructure network (maybe the best in the world - Eddington refers) [1] the first priority for this network should be to maintain its performance by maintaining roads, rail track, signalling, stations and train stock, airports and air traffic management systems,, (safety, reliability and customer experience).

- 6.3 The second priority is to enhance the performance of existing systems and networks. As Eddington proposed and as supported by recent data, this means addressing current congestion on road and rail routes primarily commuter routes but also to a limited extent strategic routes and airport and port transport links both road and rail. [1] [21]
- 6.4 A further priority is to provide new regional public transport options to enable those without access to a car to get to work and to reduce the need for car use by those that do. Given the contribution and decline of manufacturing in the regions if people are unable or unwilling to work because of transport deficiencies this should have a high priority.
- 6.5 It is important to maintain and enhance the export of high technology services and manufactured goods particularly to international growth areas (e.g. India and China). £70 billion (60%) of the import/export goods imbalance is attributable to electronic goods, vehicles (cars, buses & aircraft) and food products [22]. Given the amount of expenditure on these items manufacturing repatriation needs to be considered
- 6.6 To make locations attractive so that businesses locate and develop in the regions, employees have to easily and cheaply get to work and there must be good freight links between the production locations and markets.
- 6.7 Passenger business transport within the UK is a lower priority as the existing rail network, with the recent enhancement of the WCML, is very good and ICT is a more effective way of improving communications, increasing efficiency and reducing future transport demand. There maybe some cross country routes between the regions where a better service may help the economy.
- 6.8 Congestion on the 3850 mile strategic road network has reduced since 2003, however 180 miles (5%) cause 33 million hours (26%) of the total delay time on the network [21]. This congestion is due in large part to long distance traffic wanting to get around London and Birmingham meeting commuters wanting to go to them, travelling shorter distances, but slowing up traffic. Solutions would be to provide more road capacity around major urban areas or provide low cost rail or coach (multi point to multi point) transport for local commuters.
- 6.9 The major cause of loss of time during travel is in urban commuter travel. Discouraging road travel while providing improved public transport particularly multi point to multi point coach (not just radial flow in to city centres) is possibly the only viable alternative to reduce congestion at reasonable cost.
- 6.10 Air access to Europe from the regions is good with direct flights saving time, money, and reducing emissions. For long haul the UK continues to channel passengers through Heathrow. More direct flights from Manchester, Leeds/Bradford, Glasgow and/or Edinburgh to the US, Dubai, India, Hong Kong and Singapore (50% of all Heathrow long haul passengers go to just 15 airport locations) would relieve the pressure on Heathrow, reducing cost, time, emissions and provide direct regional access to emerging markets [23].

## 7 Problems with the current forecasting and analysis methodology

- 7.1 While it does not meet the recommendations of the Eddington study, or any other DfT strategy, HS2's High Speed Rail proposals are well documented [27] and provide a good example of how deficiencies in the evaluation system can create flawed decisions. HS2 proposals have not been evaluated by the DfT against worked up alternative options to address the problems that HS2 is considered to address, this is a fundamental requirement to good decision making but at the strategic level seems not to be carried out [28].
- 7.2 Passenger demand forecasts for HS2 are based on long distance rail elasticities to GDP based on data for the period 1990-1999, [29 30] a period when growth was attributable to modal shift from road to rail as a result of significant service improvement not GDP growth. This is a fundamental error that undermines a large amount of UK transportation planning.
- 7.3 When combined with over estimates of road and air demand growth, also based on old data analysed by opaque mathematical modelling, significant numbers of road and air passengers

are predicted to shift to HSR. As a result HS2 Ltd forecast that by 2033 the current 45,000/day long distance passengers using the WCML to London will increase to 165,000 [32].

- 7.4 According to HS2 Ltd 220,000 people will travel daily on HSR between the Midlands and further North and London. An additional 220,000 will travel daily between the other principle cities served by HS2. In order to establish this level of rail demand total journeys over 50 miles within and between these regions are predicted to triple and by 2033 to be in excess of 7 million/day [38], raising by 50% the total car distance travelled by the populations involved due solely to increases in journeys over 50 miles [33].
- 7.5 Common sense suggests this is unrealistic and the forecasts are inconsistent with the DfT high level view of future travel growth and recent evidence provided to the Select Committee, however the DfT say they were carried out in accordance with their guidance [34].

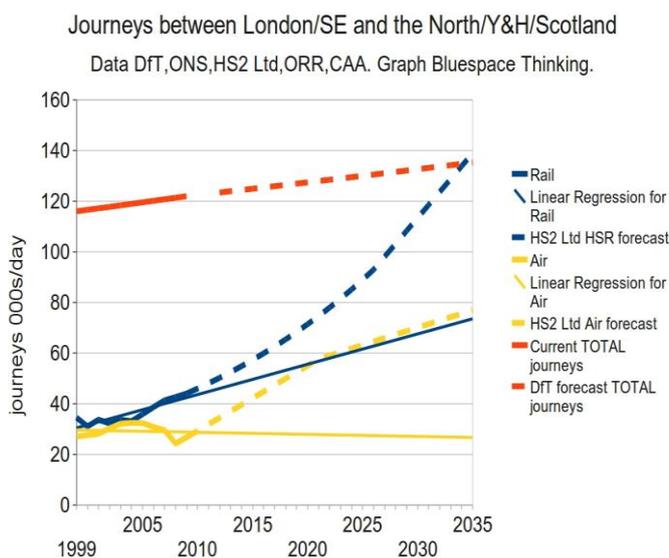


Figure 4

7.6 The predictions represent some extreme outcomes.

7.7 Based on an analysis of existing travel and DfT projections of growth, the HS2 forecasts predict that all travel between London/South East and beyond the Midlands will be by High Speed Rail, passengers by air, car and holiday coach would all have to switch. The graph shows the HS2 forecast of rail growth reaching 100% of all travel by 2035. The regression projections of rail is an overestimate as it does not take account of travel saturation and ICT and is still based on a period of significant road and air to rail mode switching. [4][17][19][33]

7.8 On average the 24 million population of Scotland and the northern regions are

each predicted to make a long distance HSR train journey every 70 days, it is assumed they will spend about 10% of their annual travel budget in this way [35].

- 7.9 If the assumptions were correct the transfer of wealth from the regions to London due to leisure travel alone would be £2-3 billion/year [9]. The negative impact on Birmingham as higher salaried employees commute to London for higher wages, reducing support role employment opportunities in Birmingham for those less skilled, will be far greater.
- 7.10 If correct the predicted increase in car travel in the next 23 years across the country would add about 30 million tonnes of CO2 emissions/year making the legal obligation for an 80% total reduction by 2050 even more difficult [36].
- 7.11 In a recent Network Rail report they present a more balanced picture of future rail demand showing the major areas requiring improvement as commuting and freight with long distance passenger route demand increasing by 65% by 2034. [38] rather than the 267% suggested by HS2 Ltd/DfT. [32]
- 7.12 HS2 maybe an extreme example of the planning process producing unrealistic results but the methods, assumptions and data are as used in all major evaluations. Over estimating demand forecasts and the benefits of major future schemes means that improvements to current congestion points and commuter services that would free up strategic road routes, encourage employment and promote economic growth do not receive sufficient investment. The Public Accounts Select Committee raised serious questions about the DfT's ability to forecast passenger demand in 2006, [39] since when we understand that the National Audit Office have not carried out a review of this aspect of the DfT's work.

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