Towards Smart Business Travel

Other

How to cite:

For guidance on citations see FAQs.

© 2010 The Open University; Transport for London; TRL
Version: Version of Record

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online’s data policy on reuse of materials please consult the policies page.

oro.open.ac.uk
Towards Smart Business Travel

Full Report

By Helen Roby

December 2010
Acknowledgments

Grateful thanks to all those businesses and people who helped with this research, particularly

Accenture - Mark Arbouine

Beachcroft – Jeffrey Ng

Build Team - Dan Davidson

BT – Dave Wilson and Ted Shann

BTCV - Chris Speirs

Capgemini - Michelle Perkins

KPMG - Markus Herz and Gemma King

PWC - Mark Avery

Carplus - Simon Parker

ITM - Paul Tilstone

Key Travel - Ajay Sodha

Legal Sector Alliance - Micael Johnstone

NBTN - Heather McInroy and Ana Svab

WWF- Jean Leston

The Open University – staff and students who completed the survey
## Contents

1. The Context .................................................................................................................. 6

2. Literature review ........................................................................................................... 7
   2.1 Introduction .................................................................................................................. 7
   2.2 The purpose of business meetings .............................................................................. 7
   2.3 Network implications from business trips ................................................................. 7
   2.4 Can teleconferencing reduce vehicle miles travelled? .............................................. 10
   2.5 The health and safety implications of business travel ............................................. 12
   2.6 Business travel policies ............................................................................................. 14
   2.7 The benefits of reducing business travel to organisations ....................................... 16
      2.7.1 The cost of business travel .................................................................................... 17
   2.8 Where the opportunities exist to change business travel behaviour? ....................... 23
   2.9 Barriers to change ..................................................................................................... 27
   2.10 Discussion of the literature review .......................................................................... 31

3. The methods and reasons for business journeys in London ............................................. 33
   3.1 Modal split and frequency ......................................................................................... 33
   3.2 Purpose of business meeting ..................................................................................... 35
   3.3 Availability of alternatives to physical journeys and frequency of use ..................... 38
   3.4 Barriers to the use of audio and visual meeting technologies .................................... 40
      3.4.1 Comparison of virtual meeting technologies ....................................................... 42
      3.4.2 New technological developments ......................................................................... 43

4. Findings from interviews with business ........................................................................ 44
   4.1 Support and engagement from TfL ........................................................................... 44
      4.1.1 Oyster Cards ......................................................................................................... 44
      4.1.2 Travel surveys and engagement ......................................................................... 45
      4.1.3 Travel Information ............................................................................................... 45
      4.1.4 Driver Safety ....................................................................................................... 46
      4.1.5 Organisational size and methods of public accountability ................................... 46
   4.2 The drivers to manage business travel ...................................................................... 48
      4.2.1 Cost savings ......................................................................................................... 48
      4.2.2 Carbon emissions ............................................................................................... 49
      4.2.3 Customers ............................................................................................................ 50
1 The Context

Business travel is an area that Government policy has left largely untouched, but in London with the percentage of business trips for an average weekday at 8% in 2007/08 (Transport for London, 2009, table 9.3, pp 137) and the average distance travelled accounting for 15% of all the distances travelled (Transport for London, 2009, table 9.7, pp 148), they account for an important proportion of daily journeys. However, this research has shown more notably, particularly for businesses that do a significant amount of business travel, there is an opportunity for TfL to engage with businesses in a new and effective way at a number of levels. These include:

- The strategic level, to outline TfLs strategy for the network and to gain feedback on these plans
- The detail level including journey planning information with carbon emissions and cost, and corporate ticketing opportunities.
- Managing the commute on a voluntary basis as part of wider Corporate Responsibility programmes.

What became clear in this research was that many businesses wanted to engage with TfL, but found it hard to find a point of contact. They also wanted to engage in different ways from the current engagement programme of workplace travel plans and the planning process.

The structure of the report is to review the existing literature covering both academic and practitioner work, but focussing on the London data where available. The paper will then go on to report the individual perspective from the findings of a survey of business travellers in London. This survey outlines the purpose of business journeys into London, the alternatives to a physical journey and their barriers to use. The final part of the report will explore the business perspective of business travel using data drawn from a series of face-to-face interviews with businesses and stakeholders. This section will look first at the support and engagement issues raised by the companies participating and then to go on to develop a picture of the business travel area within organisations. The report then covers the drivers and barriers to developing a sustainable business travel policy and the practices and methods of communication to support the policy, including the use of virtual meeting technologies. It then concludes by looking at how business travels links into the commute and the attitude of business to electric vehicles. Finally, the report draws together recommendations for TfL about alternative ways to engage with businesses.

Details of the methodology used to generate this report are given in the appendix. In brief, it involved:

- Completion of 150 on-line surveys by business travellers, identified through the National Business Travel Network (NBTN), TfLs clients, Open University staff across the regions and Open University students across a range of courses.
- Meetings with five stakeholder organisations to identify potential case studies, and
2 Literature review

2.1 Introduction
This review covers both academic and practitioner literature, and where available, for London specifically. It will concentrate on business trips made for meetings rather than other types of journeys made by business, such as deliveries or site visits to carry out maintenance. This is because for certain types of business meetings there are greater opportunities for them to be substituted with virtual meeting technologies, whereas the other types of journeys made by business, such as site visits, are unlikely to be substituted. The review will cover a range of topics including why business travel or meetings are important to business, an insight into current travel trends, the health and safety issues and costs of business travel, business travel policy, the reasons for business meetings, and the opportunities to change business travel policy.

2.2 The purpose of business meetings
Business travel is generated by the need to hold a business meeting or to visit a specific site. Business meetings are held in order to inform, discuss, present, collaborate, sell, strategise etc, but overall the purpose of a meeting is to communicate and to be co-present with people or objects (Arnfalk and Kogg, 2002, pp 17, Lyons et al., 2008). Personal meetings have long been supposed to be the most effective way of doing business, seeking out new markets, exchanging ideas and communicating to colleagues and customers alike. They are perceived to have the capacity to transmit equivocal information, to produce immediate feedback, and to build a personal atmosphere when meeting someone face-to-face (Arnfalk and Kogg, 2002). However, new video conferencing technologies can now fulfil many of these requirements. By substituting a physical meeting a company can reduce the volume of business travel, save money, improve efficiency and at the same time reduce the impact on the environment. Yet, business travel is a poorly researched area. The concentration of research for business transportation has been on the commute and freight flows. This could be largely because the business journey only affects a small proportion of workers compared to other forms of business related travel (Aguilera, 2007). Business travel in the UK in 2008 accounted for only 3% of trips, although these trips tend to be longer than other types of trips so account for 9% of the distance travelled (Department for Transport, 2009, pp28). However, the business trip can have important social implications. They can be time consuming and tiring for the business traveller, affecting the work/life balance and costly for business and the economy (Aguilera, 2007), particularly when international business trips are also considered.

2.3 Network implications from business trips
Communication within business and between businesses is changing as the structure of organisations change, which has implications for the transport network. It is suggested that more organisations work from a number of sites, that the hierarchy is flattening and employee independence is increasing. All of these changes are likely to increase the need for communication (Aguilera, 2007). This change in organisational structure is accompanied by a change in the way organisations work, so that there is a greater use of project or innovation teams. These teams can be
geographically dispersed generating an increased need for communication, which could be either achieved through physical or virtual means (Hildrum, 2007).

With this change in the structure and working practices of organisations it would be expected to see an increase in the number of business trips within the National Travel Survey (NTS) (Department for Transport, 2009). (It should be noted that the business trip data contained in both the NTS and the London Travel Demand Survey (LTDS) (Transport for London, 2009) do not distinguish between travel for business meetings or other travel carried out during the course of work). However, as Table 1 illustrates, although the average length and not surprisingly the duration of the trips has increased, average trip rate and average distance per person per year has actually fallen since 1995. This means that in the UK fewer business trips are being made, but when they do occur they tend to be increasing in length and journey time.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average trip rate per person per year (Trips/no./thousands)</td>
<td>38</td>
<td>36</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>37</td>
<td>35</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>Average distance per person per year (miles/no./thousands)</td>
<td>730</td>
<td>718</td>
<td>693</td>
<td>707</td>
<td>726</td>
<td>723</td>
<td>682</td>
<td>700</td>
<td>630</td>
</tr>
<tr>
<td>Average trip length (miles/no./thousands)</td>
<td>19.0</td>
<td>19.9</td>
<td>20.2</td>
<td>21.0</td>
<td>21.1</td>
<td>19.4</td>
<td>19.4</td>
<td>21.0</td>
<td>20.8</td>
</tr>
<tr>
<td>Average trip duration (Minutes/no./thousands)</td>
<td>36</td>
<td>38</td>
<td>37</td>
<td>40</td>
<td>40</td>
<td>38</td>
<td>38</td>
<td>42</td>
<td>41</td>
</tr>
</tbody>
</table>

Table 1: NTS travel data showing trends in business trips from 1995, (Department for Transport, 2009, tables 4.1-4.4).

Within London, the percentage of business trips for an average weekday has remained fairly constant between 1991 and 2007/08, fluctuating between 6% and 7%, but rising to 8% in 2007/08 (Transport for London, 2009, table 9.3, pp 137), notably higher than the national average of 3% (Department for Transport, 2009, chart 4.1a, pp28). The average distance travelled is also higher in London accounting for 15% of the distances travelled (Transport for London, 2009, table 9.7, pp 148), compared with 9% as a UK average (Department for Transport, 2009, chart 4.1b, pp 28).

What is noteworthy in both the national and London data is that these business trips are fairly evenly spread throughout the day and not concentrated in either the morning or evening rush periods. This could be the result of the business journeys in the course of work that includes site visits and maintenance work such as service engineers, who are likely to work throughout the day. What this data also does not show is the effect of a change in business trips on the commute. Lyons et al identified a travel pattern where people work for part of the day at home and then at some point during the day make a journey to carry out work ‘at business location(s) which may not include the usual place of work’. This travel pattern has been named by Lyons et al as ‘business varied spatio-temporal working’ (BSVT), where the main motivation for this travel behaviour was to reduce excess driving (Lyons et al., 2008, page 219). What this travel pattern begins to show is that there is a link between business travel and the commute.
At the national level the majority, 496,000 of the 630,000 business miles were made by car either as a driver or passenger, which equates to 78.7% of all business miles (Department for Transport, 2009, table 4.8, pp 32). The RAC Foundation in work with Small and Medium Sized Enterprises (SMEs) also found that the majority of business trips were made by car, particularly for meetings with clients or customers, 349 trips compared with 150 for train or underground. The proportion remains much the same for meetings with peers or other companies, with 260 meetings made by car and 110 by train or underground. Their research suggests that public transport becomes a more appealing choice as the duration of journey increases, but gives no indication of what this threshold might be (RAC Foundation and The British Chamber of Commerce, 2007).

The modal data from the LTDS does not go to the detail of purpose by mode, but with car travel either as a driver or passenger only accounting for 56% of all trips by distance on an average day (Transport for London, 2009, table 9.9, pp 149), compared to 79% of the average distances travelled by mode at the national level (Department for Transport, 2009, chart 3.1, pp 17), it would be reasonable to assume that the proportion of business trips made by car in London would also be lower than the national level.

However, what the LTDS does show in some detail is where the business trips are made within London.

<table>
<thead>
<tr>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within central London</td>
<td>8%</td>
</tr>
<tr>
<td>Within inner London</td>
<td>5%</td>
</tr>
<tr>
<td>Between central and inner London</td>
<td>11%</td>
</tr>
<tr>
<td>Within outer London</td>
<td>4%</td>
</tr>
<tr>
<td>Between central and outer London</td>
<td>15%</td>
</tr>
<tr>
<td>Between inner and outer London</td>
<td>11%</td>
</tr>
<tr>
<td>Between Greater London and the rest of GB</td>
<td>14%</td>
</tr>
<tr>
<td>All areas</td>
<td>6%</td>
</tr>
</tbody>
</table>

Table 2: London residents' trips by functional sector of origin, ‘other work’ (Transport for London, 2009, table 3.9, pp 59)

Table 2 shows that majority of business trips are made between the sectors, central to inner, central to outer and inner to outer, and a notable proportion out of London to the rest of Great Britain. But, this data is taken from the responses of London residents so does not take into account those who do not live in London but commute into London for work and make business journeys, or those who travel into London for business meetings.

What the NTS and LTDS data illustrates is that although the proportion of business trips of all trips made may be small, with the majority of them made by car they have the potential to have a large
impact on the levels of congestion, reducing the reliability of the network. This unreliability causes delays which is a cost to business through late deliveries and extended journey times for business travellers. Time travelling by car, especially when delayed due to congestion (which adds to uncertainty and risk), is also potentially an inefficient use of time as very limited work activities can be undertaken. Potential delays through congestion can mean that more unproductive journey time is allowed for, so that unreliability becomes a cost to business in itself.

2.4 Can teleconferencing reduce vehicle miles travelled?
The next question to address is the potential to reduce business miles and what are the alternatives to a physical travel. There is debate about the extent to which vehicle miles travelled (VMT) are reduced by the use of virtual technologies either in the form of teleconferencing or videoconferencing. Travel has historically been linked with economic growth, so the use of such technologies could be a way to uncouple economic growth from travel growth, leading to more sustainable development. There is evidence to suggest that this may already be happening. Since 1992, GDP has increased by 45%, but road traffic has only increased by 21% and overall travel by 16% (Lyons et al., 2008, page 212). However, it is hard to gauge the exact impact of the developing and improved technology, as the size of the workforce is changing as well as the numbers who can and do telework (Lyons et al., 2008), or the extent to which this apparent uncoupling could be linked to a limit in the growth of the transport network, compared to the growth of GDP.

Some research suggests that virtual meeting technology is actively reducing VMT. Research carried out by Arnfalk (Arnfalk, 2002) highlights the perceptions of personnel in Swedish organisations, that videoconferencing has reduced the number of business trips made, Table 3. The majority felt it had either replaced their own journeys or those of others. Only a small number considered that their travel had been increased as a result of teleconferencing.

<table>
<thead>
<tr>
<th></th>
<th>Telia</th>
<th>SVUG</th>
<th>Skanska</th>
<th>Tetra Pak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replaced my own travel</td>
<td>47%</td>
<td>45%</td>
<td>58%</td>
<td>61%</td>
</tr>
<tr>
<td>Replaced other people's travel</td>
<td>15%</td>
<td>22%</td>
<td>25%</td>
<td>19%</td>
</tr>
<tr>
<td>Some reduction but only minor effect on my travel</td>
<td>20%</td>
<td>14%</td>
<td>17%</td>
<td>39%</td>
</tr>
<tr>
<td>Participated in meetings that I would not have travelled to otherwise</td>
<td>16%</td>
<td>15%</td>
<td>n/a</td>
<td>19%</td>
</tr>
<tr>
<td>Increased my travel</td>
<td>1%</td>
<td>4%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Number of respondents</td>
<td>158</td>
<td>73</td>
<td>12</td>
<td>31</td>
</tr>
</tbody>
</table>

Table 3: Respondents impressions of the effects of that using video conferencing has had on their own and others business travel (Cairns, 2008, table 2)
This work is supported by research undertaken within BT, where the majority either definitely (36.9%) or probably (18.9%) of the 550 respondents felt that their face-to-face meetings had been replaced by a conference call, Figure 1. Just over a third of these avoided meetings (35.4%) were in the London area, 12.5% elsewhere in the Home Counties, 46.5% elsewhere in the UK and the remainder, 5.6% outside the UK (James et al., 2005).

Figure 1: Effect of respondent’s last conference call on need for meeting. (James et al., 2005)

The introduction of teleconferencing has also been suggested to only modify travel patterns, while others believe the productivity gains and increased efficiency in communications, as a result of teleconferencing would translate into an increase in the number of business trips, where telecommunications can be complementary rather than a substitution for trips. One argument that is put forward is that humans are mobile animals and that time saved through telecommunications may be offset by a desire or need to travel. This need to travel can be for a variety of reasons including ‘cabin fever’ or the need to still do non-work trips such as shopping or the school run, which may have previously been part trip chained into business travel or the commute (Mokhtarian, 1997, Lyons et al., 2008, Mokhtarian et al., 2004). Based on NTS data from 2005 on trip chaining, it would appear that women are more likely to trip chain non-work trips than men.

“Fifteen per cent of work and business trips made by men were followed by a further trip to work or business. This compares with eight per cent for women, who were more likely than men to follow a work or business trip with a shopping, escort education or social visit” (Department for Transport and National Statistics, 2005, page 27).

It may also be due to an individual’s travel time budget, which if exceeded, efforts will be made to reduce the time travelled, but if it does not reach the desired amount, efforts will be made to maintain the optimum (Salomon, 1985, Lyons and Urry, 2004). This led to the suggestion that travel
patterns are likely to be modified rather than reduced as a result of teleconferencing (Salomon, 1985). In the worst case Saffo suggests that teleconferencing could stimulate additional business travel, by reducing the time that employees need to spend on intra-organisational meetings and thereby enabling them to spend more time on travel to external meetings (Saffo, 1993).

The evidence from NTS and the LTDS would suggest that at a network level business travel is staying roughly the same, but that the average trip length is increasing. Although there is speculation that teleconferencing can increase the number of business trips, the empirical data from specific organisations such as BT and those in Sweden, clearly shows a decrease in the number of trips being made. Indeed, Cairns in an unpublished paper specifically addressing this issue, concludes that from the available evidence the majority of organisations who use teleconferencing perceive it to be reducing business travel, and quotes estimates of the potential to replace or substitute physical trips by between 10% and 35% (Cairns, 2008). The fact that the NTS data suggests only a 5% drop in business trips in the last five years could be because of the changing size of the workforce, the result of induced demand, where the newly available capacity is occupied by other business, possibly as they grow, or maybe that those substituting journeys with virtual meeting technologies are still a small sub-set of organisations undertaking business travel.

2.5 The health and safety implications of business travel

The implications of increased traffic levels on the wider social environment not only affect congestion levels and the local and global environment, but they also relate to road traffic accidents (RTAs) that occur whilst travelling in the course of work. These accidents can have implications for the reliability of the road network, costs to the economy and individual businesses, from any loss of productivity as the result of RTAs regardless of how minor the accident is.

There is fairly comprehensive data that refers to the number of work-related RTAs, but little of it is split between company car drivers or other forms of business travel and other types of work related travel. The accident data for work-related travel covers a different data set from either the NTS or LTDS. It includes the drivers of vans/pickups and lorries (LGVs), bus (PCVs), taxis/minicabs and emergency vehicle drivers and workers on, in, or near the road. Other than company cars drivers, it does not include other modes of business transport such as bus or rail passengers or walking and cycling.

However, alarmingly what the accident data does show is that road traffic accidents whilst at work are the single largest cause of occupational fatality in the United Kingdom. Estimates on the number of work related road accidents suggest that they account for between a quarter and third of all RTAs. This equates to 20 fatalities and 250 serious injuries every week (Department for Transport and HSE, 2003), or annually approximately 100,000 of all road accidents, 1,000 fatal accidents and 13,000 accidents involving non-fatal injuries (The Work-related Road Safety Task Group, 2001).

Of particular relevance to this project is that company car drivers are at a greater risk of an accident than private car drivers, with an accident liability which is between 29 and 50 per cent higher than private drivers, who were otherwise similar in terms of age, sex and annual mileage. Due to the nature of the survey used by the researchers, it mainly highlighted self reported accidents, which are inevitably dominated by damage-only accidents. The authors question whether different results would have been obtained if it had been possible to focus on injury accidents (J.Broughton et al.,
In accidents involving company cars, more often than not the company car driver is to blame, involve mainly males aged between 31-35 years, include more fatalities than other vehicle types, if the driver is to blame, happen on rural unclassified roads (60 mph limit) and are most likely to be caused by excess speed, poor observation, excess alcohol or slippery roads (Clarke et al., 2005, page 35).

It is therefore not surprising that Bibbings calculated from the Society for the Prevention of Accidents’ (RoSPA) figures, that car drivers who are required to drive 25,000 miles a year as part of their job have a 1 in 8,000 chance of being killed in a road accident (Bibbings, 1997). A risk almost comparable to that faced by employees in occupations where there is an accepted heightened risk of fatality during the course of their work, for example coal mining. The risk to company drivers being involved in non-fatal accidents is considerably higher (J.Broughton et al., 2003).

There are a number of reasons proposed why company car drivers have this greater risk of accident than private car drivers. What is notable is that many of these reasons are ones that can be directly influenced by the organisation, such as,

(i) the cars driven by company drivers,
(ii) the journeys that they make,
(iii) differences between the driving behaviour of private and company drivers,
(iv) requirements of the work that they perform,
(v) the procedures and cultures within the organisations that provide company vehicles (J.Broughton et al., 2003, pages 9&10).

In the TRL report *Work Related Accidents* (J.Broughton et al., 2003), speculation is made as to why the ownership of a company or fleet vehicle leads to a greater number and severity of accidents. The report suggests that company cars tend to be bigger, more powerful and newer than privately owned cars. Company car drivers have less concern about the ownership of the car, as they are not responsible for the general maintenance or repair of the vehicle after an accident. It is postulated that the larger size of car and lack of ownership, and thus responsibility could lead to company car drivers driving less safely (J.Broughton et al., 2003).

However, it is in the interest of business to control the risks from business travel. The effective management of occupational road risk offers major safety and financial benefits. It is estimated that at-work road traffic incidents may cost society £3.7 billion, and £2.7 billion to employers alone. As well as these costs to society and to business, there are other major benefits to employers, similar to those that would be expected from any health and safety management. These include fewer accidents, fewer injuries, less need for investigation and paperwork, less lost time and work rescheduling, lower training costs, fewer missed orders, improved morale, reduced insurance costs and so on, all contributing to improved productivity. (The Work-related Road Safety Task Group, 2001).

Businesses also have a legal obligation for the health and safety of their employees. It is not sufficient to just ensure that company vehicles have a valid MOT certificate, and that drivers hold a valid licence. Health and safety law, and more recently Corporate Manslaughter law applies to on-the-road work activities, as to all work activities, and the risks should be effectively managed within
a health and safety management system. On road activities include driving a car, motorcycle, bike or fleet vehicles, either occasionally or as a main job (Department for Transport and HSE, 2003).

What this brief review of the literature on health and safety issues of business travel shows is that it tends to focus on reducing the risk through risk assessments and taking the necessary steps to reduce unnecessary risk. What the literature does not highlight is the importance of reducing the need to travel, thus removing the risk at the source.

2.6 Business travel policies
An important aspect of managing business travel and the risks highlighted in the previous section are the business travel policies within organisations. This is particularly important, as to a large extent the behaviour of individuals in their business travel behaviour is determined by the policies set by the organisation. An overview of travel policies was published within HR Analysis as part of their Income Data Services (IDS) series (Income Data Services, 2008). The businesses covered in this report were Alliance and Leicester, Astra Zeneca, Bombadier, Clarks International, Electrocomponents, IBM UK, Kodak, Logica, National Grid, Next Retail, Royal London Group, Shell UK, Total UK, Unilever and Virgin Media

What is interesting in this data is how little is offered as an incentive to staff to travel sustainably and some of the policies could actually encourage staff to drive in preference to train or other forms of sustainable transport. What the IDS review does not cover is whether there are policies to encourage people to use virtual meeting technologies.

The main areas covered in the IDS review include company car policy, mileage rates, air and train travel policies and season ticket loans. This report will now briefly summaries the policies in the IDS review.

Company car policy

Company car policy varies between the different organisations and is tailored to meet the needs of the business. On the whole the company car is accepted as something an organisation has to offer either for staff as a requirement of their work or as a status perk. Of the fifteen organisations in the IDS report, only one organisation offered no company car, one on a job need basis only and the rest offered both need based and status cars. This existence of the company car is considerably higher than in a survey on behalf of the NBTN, where only 43% of organisations who responded stated that their company supplied company cars for staff (S.Potter et al., 2008). Of the job need based cars in the IDS review, the majority had criteria which included a minimum annual mileage, number of days used per week or specific roles such as sales and field staff. Criteria based on usage run the risk of people increasing their business mileage or usage to qualify for a company car. However, the thresholds for business mileage are set quite high at between 7,000 and 10,000 miles per year, so any member of staff would already be driving substantial distances to be close to reaching these thresholds already.

An area that could be developed further to reduce carbon emissions would be a wider availability of the option to trade down to a smaller or cheaper car. Although many organisations in the review offered this option, this is usually only available to those with status cars and not those who are job needs drivers. Of the organisations who offered this trade down option, one gave none of the
reduced cost to the employee and three limited the payments. Limiting the payments or offering no cash at all reduces the incentive for staff to choose smaller and more efficient vehicles beyond that of the staggered company car tax levels based on carbon emissions. The reason not to offer the option to trade down at all to jobs needs drivers was not explained.

**Fuel reimbursement policy and mileage rates**

The use of fuel cards, particularly where both business and personal mileage are included can be an incentive to drive more generally. However, this IDS review suggests that these are largely being phased out and are only still available for very senior managers. The fuel card for senior managers covers both business and personal mileage. Fuel cards are available for some other company car drivers, but this tends to be limited to business mileage. Yet, this could also be an incentive to drive rather than taking other modes of transport as it saves the time for the user in making mileage claims. One organisation paid a monthly sum to its company car drivers, based on an estimated annual mileage. The actual mileage was reconciled at the end of the year. This could be a strong incentive for drivers to actually drive to these estimated miles so that they are not in a position of paying back money at the end of the year.

The majority of organisations paid Her Majesties Revenue and Customs (HMRC) rates on business mileage for both company cars and private cars. These rates are shown below in Table 4 and Table 5. A few paid a little less in either or both cases. One only paid the maximum 40p/mile rate for the first 4,000 miles rather than the 10,000 miles allowed. Paying this higher rate for private cars is a fairly common practice as shown in a survey on behalf of the NBTN. The survey found that 40.3% of organisations who responded paid between 36p-40p per mile (S.Potter et al., 2008, page 7). Of the businesses in the IDS report, few had measures that actively discouraged the use of private cars for business mileage. Two organisations encouraged the use of hire and pool cars and one would only reimburse private mileage to the equivalent of the cost of the same journey on public transport. Only two organisations offered a bike mileage rate, (interestingly one of them being Shell UK) and none offered a passenger rate for car sharing. The NBTN survey showed a higher availability of car passenger rates at 19% (S.Potter et al., 2008).

![Advisory fuel rates per mile for company cars from 1st January 2008](image)

<table>
<thead>
<tr>
<th>Engine size</th>
<th>Petrol*</th>
<th>Diesel</th>
<th>LPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400cc or less</td>
<td>11p</td>
<td>11p</td>
<td>7p</td>
</tr>
<tr>
<td>1401 to 2000cc</td>
<td>13p</td>
<td>11p</td>
<td>8p</td>
</tr>
<tr>
<td>Over 2000cc</td>
<td>19p</td>
<td>14p</td>
<td>11p</td>
</tr>
</tbody>
</table>

*Petrol hybrid cars are treated as petrol cars for this purpose

Table 4: HMRC advisory fuel rates for company cars
Approved mileage allowance payments (AMAP) from April 2002

<table>
<thead>
<tr>
<th>Category</th>
<th>Rate per mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars and vans</td>
<td></td>
</tr>
<tr>
<td>First 10,000 miles in the tax year</td>
<td>40p</td>
</tr>
<tr>
<td>Each additional mile thereafter</td>
<td>25p</td>
</tr>
<tr>
<td>Motorcycles</td>
<td>24p</td>
</tr>
<tr>
<td>Bicycles</td>
<td>20p</td>
</tr>
</tbody>
</table>

Table 5: HMRC approved mileage rates for private cars

Train travel

Train travel like any form of public transport is only reimbursed at cost; there is no opportunity for individuals to make any money from using public transport. Of the businesses in the IDS review, only one had a policy that encouraged rail travel. Two offered first class travel for those who wished to work on the journey and one offered it for journeys over two hours. Encouraging staff to travel by train has benefits for the organisation by reducing the risk of accident to individuals and gives staff the opportunity to use their travel time more productively. Offering first class travel could be used as an incentive to encourage staff to travel by train.

Air travel

Encouragingly, none of the businesses offered anything other than economy class for domestic flights. Only one organisation actively discouraged flying for domestic journeys. Flying for domestic journeys was only permitted if it saved an overnight stay or the journey was over 250 miles.

Season ticket loans

Only six of the fifteen organisations offered season ticket loans, of which three were either based in London or it was limited to Head Office staff. There is nothing in the survey to suggest why loans were not more widely available or the extent to which staff were encouraged to use season tickets for business travel.

2.7 The benefits of reducing business travel to organisations

This review has so far considered the purpose of meetings that generate the need for a business trip, the network implications of business travel, the debate as to whether teleconferencing can actually reduce VMT, the health and safety implications of business travel and business travel policy. There are however, direct benefits to an organisation in reducing business travel by generating savings in time, money and carbon emissions. This section will review the literature that looks at the cost of business travel from expenses data, the business benefits of substituting a physical journey with a
virtual meeting, the carbon emissions, and concluding with a review of what could be considered the true costs of business travel to organisations.

2.7.1 The cost of business travel

Global Expense produce an extensive annual review of employee expenses in their Employee Expenses Benchmark Report 2009 (GlobalExpense, 2009). This is drawn from 4.8 million expense claims made by over 150,000 UK-based employees. Most of the data in the following sections are drawn from this report.

The report’s findings show that overall expense claims have not fallen in 2008 despite the recession and the need to cut costs. It is believed this is as a result of businesses holding more sales meetings in an attempt to increase revenue. Yet the increase is smaller than other years. Between 2005 and 2006 the total annual value of approved expenses rose from £51 million to £82 million, a 61% increase, between 2006 and 2007 from £82 million to £119 million a 45% increase and between 2007 and 2008 from £119 million to £153 million, a 29% increase (GlobalExpense, 2009, page 6). However, business travel as a proportion of all approved claims fell from 59% in 2007 to 49% in 2008 (GlobalExpense, 2009). Research carried out by the RAC Foundation and the British Chamber of Commerce suggests that ‘the majority of businesses (55%) spend between 0-10% of their annual budget on business travel, and a further 33% spend between 11-20% of their total budget on business travel’ (RAC Foundation and The British Chamber of Commerce, 2007).

Global Expense have extrapolated the data of over 150,000 UK-based employees to give an estimate of the total value of claimed expenses by the UK workforce produce the following values:

- Business mileage £5.8 million
- Business train journeys UK £11 million
- UK taxi fares £7.9 million
- Business air journeys UK £5.81 million
- Nights in hotels UK £ 10 million (GlobalExpense, 2009)

This is estimated to equate to a total cost to the economy of £3.5 billion.

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mileage</td>
<td>£31</td>
<td>£38</td>
<td>£40</td>
<td>£49</td>
</tr>
<tr>
<td>Business flights (from UK)</td>
<td>£426</td>
<td>£370</td>
<td>£318</td>
<td>£354</td>
</tr>
<tr>
<td>UK train fares</td>
<td>£34</td>
<td>£38</td>
<td>£41</td>
<td>£42</td>
</tr>
<tr>
<td>Hotel room</td>
<td>£86</td>
<td>£90</td>
<td>£90</td>
<td>£89</td>
</tr>
</tbody>
</table>

Table 6: Changes in the cost of business travel since 2005 (GlobalExpense, 2009, pp 14)
The value of business travel claims is rising. The average values of business travel claims rose from £40 to £45 between 2007 and 2008. Table 6 shows that by mode, where the mileage costs and train fares have risen steadily since 2005, the cost of business flights has actually fallen, which does little to discourage flying as a mode of transport. However, in real terms the number of miles travelled by car on company business in 2008 by UK employees, according to expenses data appears to have fallen by 25% from 2007 to 5.8 million miles. This is considered to be largely due to the increased cost of petrol.

**Business travel claims by organisation size and department**

The data for employee expenses shows that for medium sized businesses, business travel accounts for the highest proportion of claims by value at 61%, compared to 46% for large organisations and 45% for small organisations (GlobalExpense, 2009, pp 13). By department, Figure 2 shows that for the majority of departments business travel accounts for 40% to 50% of the total value of expenses claims. However, there are three notable exceptions; engineering and networks, Human Resources and training and Health and Safety and security, where the proportion rises to over 60%. These could be the hardest departments within which to bring about behaviour change, due to the purpose of the meetings or trips. Within departments such as Engineering and Networks and Health Safety and Security, the types of business trips are likely to involve site visits as opposed to meetings. Within HR, activities such as training, due to the complexity of the information that needs to be exchanged, or contentious or sensitive personnel issues are considered more successfully done face-to-face.

![Figure 2: Business travel as a proportion by value of all claims by department (GlobalExpense, 2009, pp 19)](image-url)
The Business Case

As already shown, business travel is estimated to cost the economy £3.5 billion per year and accounting for between 45% and 61% of all business expense claims, finding alternative ways to the physical journey to conduct meetings has some obvious financial benefits for business and the economy. Research carried out on BTs teleconferencing facilities and by Wainhouse Research highlight some of the hard financial savings and softer benefits that can be realised by businesses.

The research carried out within BT by SustainIT and the University of Bradford suggests that 296,000 face-to-face meetings a year are eliminated by using teleconferencing. 46% of these avoided trips were made by car, 78% of the trips would have occurred in peak periods, (which is a higher proportion than in either the NTS or the LTDS data), 33% of replaced meetings would have been held in London, (a reflection of 33% of the respondents having their main working base in London or the South East). Each avoided meeting is estimated to have saved a minimum of 32kg of travel related CO\textsubscript{2} emissions, which equates to a total annual carbon emission saving of 47,400 tonnes, minus the emissions created by the equipment to make the calls, which is estimated to be annually 3.2 tonnes.

To BT the cost saving of an avoided meeting is a minimum of £432, giving a total avoided cost of £128 million per year. This figure of £432 is broken down into;

- time lost travelling, £200
- travel costs £182
- overnight stays £50

Other companies such as RBS estimated that it saved more than £70,000 a month eliminating corporate travel through the use of video and audioconferencing, and Skanska estimated that it saved £500,000 in 18 months from the use of videoconferencing on four projects in two head offices in the UK (Cairns, 2008).

However, BT acknowledges there are also costs incurred in the use of teleconferencing, but these are only estimated to be between 10-15% of their annual avoided cost. It should also be considered that in reality these cost savings are even higher once the soft benefits of better decision making and improved work-life balance are considered. A further report by Wainhouse Research on behalf of Polycom also highlights the importance of ‘soft’ benefits, which it considers are much harder to quantify but equally as important. They include benefits such as faster decision making leading to shorter time to market, improved productivity and efficiency by facilitating ad-hoc meetings that become part of the daily workflow, competitive advantage by speeding up the recruitment process, supporting remote workers, dispersed project teams, and improved quality of life (Davis and Weinstein, 2005).

In the research of BT staff, attempts were made to quantify the effects of teleconferencing on work performance. Of the personnel surveyed, 19.2% felt that teleconferencing had considerably improved work performance, 55.1% slightly improved, 20.5% not at all and only 5.1% felt that work performance had either slightly or considerably deteriorated. The main reasons for this increase in performance included;
• Better control of time
• Reduced stress/time of travelling
• Easier to stay in touch with colleagues
• Easier to access expertise
• Easier to make decisions (James et al., 2005).

Results of survey by Denstadli adds to this research by quantifying what staff perceived to be the most important reasons to adopt video conferencing, Figure 3.

Figure 3: Reasons to use videoconferencing (Denstadli, 2004)

Wainhouse Research was commissioned by Polycom to develop the business case for videoconferencing, a major product line that they sell. The research looks at the return on investment (ROI) of installing videoconferencing equipment. They assume a company employing 250 people at ten different sites, where 10 users convert 40% of their travel meetings to video meetings gives a ROI of 226%. The report suggests that if the user adoption increases to 15 of the 250 employees converting 60% of their meetings to video conferencing the ROI increases to 500%, (Davis and Weinstein, 2005).

The Wainhouse report is commissioned for a company selling videoconferencing facilities, so will of course only give the benefits of their products. However, it is useful to highlight the importance of user adoption of videoconferencing technologies on ROI and as seen with BT the importance of the
‘soft’ benefits. Within the BT report it is suggested that the ‘soft’ benefits could actually create ‘a value at least 10-15 times greater than its cost (James et al., 2005, pp 4).

Carbon emissions from business travel

The cost of business travel should not just include the financial costs, but also include externalities such as the carbon emissions as a result of the journeys. In 2006, the transport sector accounted for 24% of UK domestic carbon emissions, with road traffic forming 92% of these emissions. Commuting and business travel were the largest emitters of carbon for all modes of passenger transport between 2002/2006, with commuting accounting for 24% and business travel 13% (Department for Transport, 2008, pages 3-6). The LTDS data does not give this detail of carbon emissions for London, but the Mayor’s Transport Strategy shows that 22% or 10 million tonnes per year of all carbon emissions within London come from transport. This is made up of,

- Ground based aviation 11%
- National rail 4%
- Underground 4%
- Road freight 23%
- Car and motorcycles 49%
- Taxi and PHVs 4%
- Bus 5% (Mayor of London, 2009, page 101)

However, this is not split down by purpose.

There appear to be a number of barriers to businesses fully engaging with managing carbon emissions from transport. These include entrenched business behaviours, but also environmental and CSR reporting structures, for example the ‘Green House Gas Protocol’ (GHGP) and ISO 14001. ISO 14001 does not include transport as one of the required reporting elements, and the GHGP only requires the reporting of emissions from vehicles owned by a company, such as company cars, as part of Scope 1, direct emissions. Business journeys made in vehicles not owned by the company is accounted for in Scope 3, indirect emissions, which unlike Scope 1 emissions, the reporting of is merely voluntary (World Business Council for Sustainable Development and World Resources Institute, 2004, page 25). It is therefore not surprising that if the reporting of business travel carbon emissions is voluntary it is only happening in a limited number of companies.

<table>
<thead>
<tr>
<th></th>
<th>Total carbon tonnes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>1,941,857</td>
<td>56%</td>
</tr>
<tr>
<td>Train</td>
<td>277,923</td>
<td>8%</td>
</tr>
<tr>
<td>Taxi</td>
<td>20,382</td>
<td>1%</td>
</tr>
<tr>
<td>Hotel</td>
<td>409,180</td>
<td>12%</td>
</tr>
<tr>
<td>Flights</td>
<td>830,437</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3.5 million</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 7: Carbon emissions from UK employees business travel in 2008 (GlobalExpense, 2009, pp 26).
Within the Global Expense report further work is undertaken by ‘Carbon Statement’ to analyse the carbon emissions based on the expenses data from domestic business journeys. This data is broken down by mode for business travel, highlighting that over half of the emissions from business travel are from car travel, Table 7.

However, as the experience of BT has shown, there are considerable savings that could be made by switching to virtual means of communication, suggesting that the use of teleconferencing cut their carbon emissions by 47,400 tonnes per year (James et al., 2005). Research by the RAC Foundation estimates that if 100 meetings per month are replaced by a wireless communication an annual saving of 720 tonnes of CO$_2$ could be made (RAC Foundation and The British Chamber of Commerce, 2007). Should the monitoring of carbon emissions from business travel become compulsory, the increased use of virtual technologies and sustainable modes of transport could become more important as a way to help reduce carbon emissions.

The true cost of business travel

The previous sections looked at the cost of business travel from expenses data, the size of organisation and departments making the highest proportion of claims, the cost by mode, the actual cost of business travel to BT and the potential savings that could be made through the use of teleconferencing and video conferencing, concluding with an overview of the environmental emissions. These costs could be split into three main categories, private costs, organisational costs and societal costs.

**Private costs** should reflect the total of each meeting participant’s individual discomfort from a meeting, this could include; having to stay away from home over night, or getting up very early in the morning to make the journey, fear of flying etc.

**Organisational costs** should include the participating organisation’s full cost of the meetings including travel cost, cost of accommodation, cost of travel allowances, the connection cost (virtual meetings), cost of time not used for effective work during travel etc.

**Societal costs** should comprise the cost to society of a meeting including the environmental impacts caused by the meeting, but also the costs of infrastructure, health care etc that have not already been included through taxes or pricing mechanisms, in other words the externalities (Arnfalk and Kogg, 2002).

Businesses are beginning to put a value to the organisational costs as the example from BT shows. However, the private and societal costs are rarely taken into account as they are largely treated as an externality to business, even though private costs such as fatigue from travelling could impact on productivity and when driving, could lead to accidents, which ultimately are organisational costs. Should these costs be internalised, it will develop an even more compelling business case to manage and reduce business travel.

However, the face-to-face meeting will continue to offer benefits and should never be completely eradicated. Arnfalk and Kogg suggest that an ‘optimal meeting’ should offer both private or personal and organisational benefits. The private benefits should include the sum of each meeting participant’s individual benefits from a meeting. This could include building personal networks,
building deeper personal relationships, the pleasure of getting out of the office and seeing new places. The organisational benefits should reflect the sum of each participating organisation’s use of the meeting, including the short-term and long-term consequences of the meeting. But organisational benefits that are of use for the employer as well, for instance if an employee forms a close relationship with a customer, this is also likely to be of benefit to the employer (Arnfalk and Kogg, 2002).

What this part of the review has shown is that the ‘hard’ financial savings are only part of the costs of business travel, and that by including the private and social costs and other ‘soft’ benefits, this then develops a broader picture of the true cost of business travel. The benefits to an organisation begin to go beyond those of pure cost savings to include corporate responsibility and becoming an employer of choice as the culture and image of the organisation begin to change.

2.8 Where the opportunities exist to change business travel behaviour?
The above review of the costs of business travel shows a developing business case to switch to alternative forms of meeting such as video and teleconferencing, but where are the opportunities to change business travel behaviour?

Work by the WWF outlines a hierarchy of what they consider are the priorities in changing business travel behaviour, Figure 4. It is interesting that with business travel, as a direct cost to the business, reducing the need to travel is seen as a higher priority than making the travel more sustainable. This is in contrast to workplace travel plans, where the focus has been to introduce more sustainable modes for the commute, rather than reducing the need to travel, but then the commute is not a direct cost to business. However, it would make sense to use the same hierarchy for the commute, which could deliver cost savings to business by reducing the demand for real estate and therefore more likely to attract the interest of business.

Figure 4: WWF Pyramid of Travel Priorities (Wreford and Leston, 2009, pp3).
Having identified the priority of reducing the need to travel, further research has shown the sorts of organisations that are most likely to change their behaviour. Denstadli suggests that banking/insurance, IT, oil and the chemical industries are the most likely organisations to change
their behaviour (Denstadli, 2004). However, these suggestions should be taken with caution as they are industries that are particular to Norway.

Further work by Aguilera highlights the demographic of the business traveller. The National Household Travel Survey 2001-2002 in the US, found that 20% of business travellers earned over $100,000. This is supported by work by the RAC Foundation which found that as well as business travellers having the highest incomes, they have the highest car ownership rates (RAC Foundation and The British Chamber of Commerce, 2007). Travel, particularly long distance travel appears to be related to hierarchical position, which also appears to relate to gender. In the US over 77% of citizens taking business trips in 2002 were men. Males still appear to make up the majority of managers and executives. Women of professional status would appear to prefer jobs with less travel, possibly because of increased family and household responsibilities (Aguilera, 2007).

This trend is supported by data collected in the NTS for both the commute and business travel. In 2008 for men of working ages between 17-59, 28% of their trips were to commute, with an additional 6% for business trips. Among women in this age group, 19% of trips were to and from work, and only 3% were for business (Department for Transport, 2009).

Understanding that more males are making business trips than women and that they are the higher earners, in itself does not really give an explanation of how to reduce the number of business trips made. The data suggests that higher earners are making most of the business trips, and are therefore more likely to be those in management positions. This could suggest a certain type of meeting that is occurring, so it is perhaps more beneficial to understand the types of meetings, rather than the types of individual or organisations that are easier to change.

Types of meetings

Cairns suggests that there seems to be greater opportunity to replace internal meetings with video conferencing, so potentially organisations with higher levels of internal meetings will have a higher propensity to change (Cairns, 2008). It would be useful to understand more about what makes internal meetings easier to substitute with virtual technologies than other meetings.

The types of meetings could be classified in a number of ways, such as tacit or codified, internal or external meetings with customers or suppliers. The opportunity to remove the need to travel will depend on the type of meeting that is being held, the purpose, complexity, distance between participants and length of the meeting.

The classification of tacit or codified goes some way to explain the complexity of meetings. Lundvall and Johnson’s definition of a codified meeting describes it as one where ‘knowledge about facts (know-what) and knowledge about principles and laws (know-why)’ are imparted (Lundvall and Johnson, 1994). Meetings involving codified knowledge are easier to substitute with virtual communication methods. However, the exchange of tacit knowledge is more likely to require face-to-face meetings. Tacit knowledge refers to competence and skills (know-how) and to information about who knows what and who knows how to do what (know-who) (Aguilera, 2007). These are the types of meetings often undertaken by the top managers, commanding the higher salaries.
This concept of complexity and purpose of a meeting is explored further through *Media richness theory*. Media richness theory is based on the idea that the choice of communication channel should be based on the character of the information that needs to be communicated. The theory suggests that a message with a high degree of complexity should be communicated through a dense medium, where the possibility for feedback exists, such as a face-to-face meeting or a high quality video conference. Less complex messages can be transmitted through a low-density medium, such as email. But it is argued that this theory is too simplistic and the decisions about the communication method are also reliant on personal and social characteristics. Yet, others argue that the personal character of the message will also influence the choice of media, where phone calls were considered more personal than an email message (Arnfalk and Kogg, 2002).

Further research has endeavoured to identify the specific meetings that could be switched from face-to-face to virtual. A review of this research by Cairns suggest that teleconferencing is not appropriate for kick-off or closure meetings, but more useful for a work in progress meeting, task orientated activities and for decisions at short notice. Whereas face-to-face contact should be prioritised for new relationships, whilst email is more appropriate for established relationships and non-controversial message delivery (Cairns, 2008). Arnfalk and Kogg illustrate what they consider are the likely factors to affect the choice of meeting medium, Figure 5.

**Figure 5: Model of contextual factors influencing meeting behaviour (Arnfalk and Kogg, 2002)**

The distance between participants and the number of units at different geographical locations within a company is a strong factor in deciding the meeting medium and the need for meetings. If participants are located close to each other they are more likely to hold face-to-face meetings. This determinant, not surprisingly, is closely related to the time factor. The purpose of the meeting is also related to the complexity and character of the message, for example training or conferences are
more likely to require face-to-face interaction. Another important factor is the relationship between the participants. Where a relationship is already established virtual communications are more appropriate, but to build up that relationship initially, a face-to-face meeting is considered more effective. This is a view supported by BT’s Director of People and Policy, who claims a policy of encouraging staff when travelling to ‘...stay for longer and travel less. Go to get to know people, establish a relationship, and then use the technology to communicate after that’ (Roby, 2010).

This breakdown between the meetings that could be held virtually and those where a face-to-face meeting would be preferred was quantified by Arnfalk and Kogg, Table 8. This data shows that shorter, regular meetings where people have already developed a relationship are more likely to be substituted by virtual communications, but relationship building, long and creative meetings are more suited to face-to-face meetings.

<table>
<thead>
<tr>
<th>Types of meetings when virtual alternatives are preferred</th>
<th>Number of respondents</th>
<th>Types of meetings when the physical alternative is preferred</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow up or check up meeting</td>
<td>56</td>
<td>Kick off, kick out</td>
<td>79</td>
</tr>
<tr>
<td>Informing, information meeting</td>
<td>51</td>
<td>Discussion</td>
<td>11</td>
</tr>
<tr>
<td>Time, short meetings, maximum number of hours</td>
<td>37</td>
<td>Long meetings</td>
<td>10</td>
</tr>
<tr>
<td>Regular, repeated, consecutive meetings</td>
<td>29</td>
<td>Customers, external (contacts)</td>
<td>9</td>
</tr>
<tr>
<td>Monthly, weekly meetings</td>
<td>11</td>
<td>Important meetings</td>
<td>6</td>
</tr>
<tr>
<td>‘Working’ meetings</td>
<td>10</td>
<td>‘Working’ meetings</td>
<td>6</td>
</tr>
<tr>
<td>Decision making</td>
<td>8</td>
<td>Brainstorming</td>
<td>5</td>
</tr>
<tr>
<td>When people know each other</td>
<td>8</td>
<td>Many participants</td>
<td>3</td>
</tr>
<tr>
<td>(Situation requiring) creativity</td>
<td></td>
<td>(Situation requiring) creativity</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 8: Types of meetings suitable for virtual or physical meetings (Arnfalk and Kogg, 2002)

The general trend in the research would suggest that the meetings most likely to be substituted by a virtual meeting are those where a relationship has been developed, and the exchange of information is less complex, such as know-what or know-why rather than know-how or know-who. Having identified the meetings that are more acceptable to change to virtual meetings, what potential is there to change these meetings?
The potential types of meetings that could be changed

A study in 2010 on US business air travel suggested that as many as 7% of trips could be substituted, expecting intra company to be those most substituted. The study showed that replacement effects increased significantly with trip distance, and had greater impact on domestic flights than on international flights. It was also calculated that substitution would rise to 14.5% for users of video conferencing technologies, 70% of this due to less intra-company travel. Total substitution effects, which includes organisations not utilising video conferencing, were estimated to be 4.3% (Denstadli, 2004).

Other recent studies suggest that approximately 50% of business trips could be substituted by virtual communications.

- Face 2 Face research shows that 50% of travellers through a London station considered a video meeting would be preferable to their physical journey (Face2Face, 2004).
- Denstadli’s survey of Norwegian companies found that 51% of the companies expected to make greater use of video conferencing (Denstadli, 2004).
- An ITM survey of members in the UK reported that 55% claimed that they would encourage video conferencing, 27% would encourage the use of teleconferencing, but not necessarily for adoption to increase, 11% were unsure and 7% believed that companies would not change their behaviour (Tilstone, 2008).

This shows that there is a large potential to reduce business trips, but there is a possible barrier to the number of meetings that could be changed. (The barriers to change will be covered in more depth in the next section). Data from the RAC Foundation of SMEs shows that 70% of respondents felt that between 41% and 100% of their meetings were with clients in comparison with 58% considering that 0 to 20% of their meetings were company-wide meetings (RAC Foundation and The British Chamber of Commerce, 2007). As previously mentioned there is a greater willingness to substitute physical travel for virtual meetings when the meetings are internal, so this would suggest a limiting factor.

2.9 Barriers to change

Research into the barriers to reduce the need to travel or to more sustainable modes has concentrated on the corporate barriers, but this is limited. There is even less research into the individual barriers to changing business travel behaviour.

Work by the RAC Foundation highlights a number of corporate barriers to change. Figure 6 shows that the biggest barriers to the use of virtual technology are a belief that this could affect customer relations and profit. Suggesting an unwillingness to substitute customer meetings, which the previous section showed make up the majority of meetings. Other work also supports that of the RAC Foundation by highlighting the perceived importance of external customer meetings, where taking time to visit clients or customers is seen to be showing an interest in the customer. This could seemingly give a competitive advantage over organisations which make less effort to be ‘seen’ by their customers, particularly if it is supposed that for customer meetings the use of virtual technologies was a second class alternative (Arnfalk and Kogg, 2002). There is the added
complication that influencing the meeting medium of an external meeting is harder than for an internal meeting.

In Figure 6 it is also interesting to note that a lack of Government support ranks so highly, suggesting that more guidance and help from central and local Government to reduce business travel would be welcomed, or perhaps this is just a way of passing on the responsibility. At present there is no requirement for businesses to quantify what they spend on business travel, and Cairns suggests that anecdotally, many organisations may not know exactly how much is spent. Business travel, particularly aviation can be artificially supported by other institutional factors, such as aviation fuel being untaxed, making air travel artificially cheap compared to the cost of teleconferencing equipment. At the personal level the availability of Air Miles offers a tax free perk that encourages employees to choose air travel over the train for example (Cairns, 2008), where business travel policy gives the individual a choice.

Figure 6: Barriers to Change in Business Travel Policy (RAC Foundation and The British Chamber of Commerce, 2007)

The perception of a lack of Government support could also be perceived as one of network management. In the 2009 CBI report, ‘Time to Change Gear? Assessing the UK transport networks’, it considers tackling congestion to be the responsibility of Government, through improvements to the transport network (CBI, 2009). The report does not suggest the need for business to take responsibility by managing their own transport demand. This is surprising considering the findings of the Eddington Report in 2006, which stated that a 5% reduction in travel time could generate cost savings of around £2.5bn to the economy (Eddington, 2006).

The other two main barriers in Figure 6 are those concerning the initial cost of installing the virtual communication technology and the training given to support the use. Research by Aguilera suggests
that a lack of knowledge or familiarity with alternative technologies, accompanied by poor access to them can be a barrier to their use (Aguilera, 2007). This is a concept further explored within ‘Channel Expansion Theory’. This argues that the ‘bandwidth’ of a medium such as teleconferencing expands over time as the user learns how better to use it. The result is that a less dense medium is used more extensively in a greater variety of ways and environments, so that it begins to be used as a denser medium. This theory tells us that it is important to have uniform meeting behaviour so that everyone is on the same level on the learning curve for the types of media that are used, and it also tells us that by promoting the use of virtual communication channels it is possible to expand the bandwidth of these types of media, thus, increasing their range of use (Arnfalk and Kogg, 2002). If an innovation such as virtual communication technologies is not diffusing successfully into the meeting environment, there will not be a uniform meeting behaviour, leading to a reticence of those who are unfamiliar with the technology to use it.

This diffusion of an innovation could be explained by the Attributes of an Innovation within Diffusion Theory. Rogers suggests five attributes that can affect the rate of adoption of an innovation.

i. **Relative advantage** is the degree to which an innovation is perceived to be better than what it supersedes or other competing innovations.

ii. **Compatibility** is the degree to which an innovation is perceived to match existing needs and values of the adopters.

iii. **Complexity** is the degree to which an innovation is perceived to be relatively difficult to understand. This is negatively related to the rate of adoption, in that the more complex the innovation the slower the rate of adoption.

iv. **Trialability** is the degree to which potential adopters are able to experiment with the innovation before adoption. This may be done either directly by the adopters or through the experience of others. Innovations that can be implemented in instalments are more likely to be adopted than those that are indivisible.

v. **Observability** is the degree to which an innovation is visible to others, either as a product or the results of the innovation (Rogers, 2003).

The use of virtual technologies can be argued to offer the relative advantages of environmental, cost and efficiency savings, but if perceived to be complex, may not be compatible with the culture and working practices of an organisation or individual. The opportunities to trial may be limited as the availability to hire facilities such as high quality telepresence facilities on a test basis are still developing, although the availability through organisations such as Polycom in partnership with office rental companies like Regus are being expanded (Roby, 2009). Limited options to trial these technologies could reduce the ability to increase the ‘bandwidth’ of virtual technologies, which in effect reduces their observability as the numbers using the technology are limited.

The lack of widespread adoption and availability of new technologies could be a major barrier to a reduction in business miles, especially when the use of technology was seen to offer the greatest potential to reduce business travel by car (RAC Foundation and The British Chamber of Commerce, 2007). However, encouragingly according to the research by the RAC Foundation, over half of the businesses surveyed had taken steps to reduce business travel. Of those organisations, teleconferencing was the most adopted method, 50%, followed by instant messaging and Voice Over Internet Protocol (VOIP) 29%, video conferencing 15%, and online collaboration sites 12%. The
automotive alternatives adopted include car sharing 19%, changes to company car policy 10%, and car pooling 5% (RAC Foundation and The British Chamber of Commerce, 2007, fig 8, pp23).

Additionally, there are a number of other business related barriers to a change in business travel policy. These can be at either the organisational or cultural level, which can lead to a growing tension between the needs and desires of the employees and those of the organisation. In work by Aguilera in 2007 it was found that although business travel can be intrusive into the work/life balance and tiring, none of the respondents publicly complained about business travel. In contrast the organisation saw professional mobility as an example of flexibility and reactivity of the organisation and the employees. Lassen notes that HP in Denmark exerted ‘institutional pressure’ on the employees to be mobile (Aguilera, 2007). This is a perception that is going to be hard to change, with a view that business travel is considered to be one of the main drivers of economic growth bringing regeneration to areas and therefore business (RAC Foundation and The British Chamber of Commerce, 2007). The other problem is that a change in business travel policy may not always lead to a reduction in business trips. Companies that are looking to cut the cost of business travel, may opt to reduce the cost of the trip with their travel management company, rather than reducing the actual number of trips (Aguilera, 2007).

The barriers may also be practical in nature. For example, the booking of a business trip through a travel management company can be easier than trying to book a video conference suite, or the form of meeting medium may be decided by the project leader based on their preferences or training and knowledge of virtual meeting technologies (Arnfalk and Kogg, 2002). The distance between participants can also be an important factor. Where co-workers are based closer together, they are more likely to travel to meetings than those that are geographically distant (Aguilera, 2007). A change to a more sustainable business travel policy may also be predicated by the perception of public transport. The RAC Foundation found that 70% of SMEs consider public transport 'not fit for purpose', with reliability and travel time seen as the main considerations when deciding on the mode of transport to take (RAC Foundation and The British Chamber of Commerce, 2007).

However, there are also individual barriers to change. Three quarters of SMEs surveyed suggested they enjoyed travelling for business. This could be related to the perceived prestige of business travel, which is associated with the sense of own identity, especially when also related to high levels of education and income. There are other benefits or privileges such as loyalty programmes, the value of travel time to work or relax, or the ability to link business journeys with visiting friends and family (RAC Foundation and The British Chamber of Commerce, 2007, Cairns, 2008, Arnfalk and Kogg, 2002). Conversely, there are considerable benefits in not travelling both for the individual and the company, by reducing employee fatigue, the build up of work, or wasted time on flights (Cairns, 2008).

What is clear from the literature review is that there is little research into the barriers to change to sustainable modes of transport, the focus of what research there has been considers the barriers to the use of virtual meeting technologies. The research that does exist into the barriers to sustainable modes, considers the reasons why rail usage has increased or decreased, but does not state whether it is specific to business travel. This research undertaken by the British Chamber of Commerce (BCC), shows that 22% of businesses across the UK have increased rail usage over the last twelve months, and within London the figure rises to 34% of businesses (British Chamber of Commerce, 2008). Table
9 shows what are considered to be the reasons that rail travel has increased or decreased in the last twelve months. Road congestion, access to city centres and the ability to work are given as the main reasons to increase rail usage. Interestingly, when respondents were asked what improvements they would like to see, facilities such as Wi-Fi was only considered important by 21%. The main reasons for reducing rail usage involve cost and scheduling. These issues also featured strongly in the improvements required. 69% of respondents considering lower fares to be important, and scheduling related issues such as punctuality/reliability 55%, new high speed train network 42%, routes on offer 41% and journey times 27%, making up the bulk of the remaining improvements required.

<table>
<thead>
<tr>
<th>Reasons for rail usage increase</th>
<th>Reasons for rail usage decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road network is too congested</td>
<td>Other transport less congested</td>
</tr>
<tr>
<td>54%</td>
<td>14%</td>
</tr>
<tr>
<td>Easier access to city centre</td>
<td></td>
</tr>
<tr>
<td>54%</td>
<td></td>
</tr>
<tr>
<td>Ability to work on trains</td>
<td></td>
</tr>
<tr>
<td>53%</td>
<td></td>
</tr>
<tr>
<td>Environmental reasons</td>
<td>Environmental reasons</td>
</tr>
<tr>
<td>29%</td>
<td>2%</td>
</tr>
<tr>
<td>Change in business needs</td>
<td>Change in business needs</td>
</tr>
<tr>
<td>20%</td>
<td>29%</td>
</tr>
<tr>
<td>Rail transport is cheaper</td>
<td>Other transport cheaper</td>
</tr>
<tr>
<td>19%</td>
<td>51%</td>
</tr>
<tr>
<td>Improved scheduling and capacity</td>
<td>Poor scheduling</td>
</tr>
<tr>
<td>12%</td>
<td>52%</td>
</tr>
<tr>
<td>Concerns about security at airports</td>
<td></td>
</tr>
<tr>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>5%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Table 9: Reasons for increased or decreased rail usage (British Chamber of Commerce, 2008, pp 13)

There is clearly a paucity of data showing the barriers to a change to more sustainable modes. Potentially many of the barriers could be related to perceptions rather than a reality, for example an awareness of the availability of cheaper rail tickets when booked in advance or the view that public transport is not ‘fit for purpose’ (RAC Foundation and The British Chamber of Commerce, 2007). Also perceptions about poor reliability or punctuality of public transport could be equally applied to car travel.

2.10 Discussion of the literature review

What this review of the literature shows is that business travel is a poorly researched area. There are some areas that have been researched more extensively than others such as aviation and the benefits of using virtual technologies. Yet there are other areas of importance that have been largely neglected, particularly the impact that a change in business travel patterns can have on the commute and the subsequent network implications. There is a possibility that any savings made by companies, such as those demonstrated by BT are lost to induced demand on the wider network, or
by reducing business travel, employees are travelling to and from the office in the peak periods instead, so increasing congestion at these times. Conversely, if the business journey was replaced by a video conference, so that the car was not needed during the day, would that enable staff to travel to work more sustainably?

Another aspect of research that is missing is that of the full costs of business travel. Arnfalk and Kogg, 2002, point out that the cost of business travel extends beyond those of the organisation to both the private and social costs. These costs perhaps need to be considered more holistically to include the social and private costs of not travelling for business as well. As previously discussed the private and social costs are not generally taken into account by business. However, business has been forced to take more responsibility for these costs as a result of the changes to corporate manslaughter laws. Yet there is an opportunity to further develop a business case that supports a reduction in business travel, by exploring further the private and societal costs, or the externalities, which starts to link business travel more closely into a corporate responsibility agenda.

Most of the research into benefits and barriers of changing a business travel policy concentrate on the use of virtual technologies. But much of the research combines video and teleconferencing together. Teleconferencing is now a relatively widely used form of communication in some mediums, but as yet video conferencing is still relatively marginal. The barriers and opportunities between these different forms of virtual meeting technology need to be more clearly defined.

There is also a need to look at the benefits and barriers to the use of sustainable travel modes including public transport, trip sharing or linking, or the introduction of ‘works’ buses between sites. This is an area that has been touched on by British Chamber of Commerce which explores the reasons to increase or decrease rail travel, and by Holley et al, which explores the value of travel time. The work suggests that particularly with the advent of higher quality ICT, travelling is no longer a barrier to work, or that it can create an opportunity to give ‘anti-activity’ time, which may be beneficial for productivity or creativity (Holley et al., 2008). But this value of travel time cannot be achieved easily while flying or driving, so is generally limited to train travel.

Work to explore the barriers to a change in business travel policy has also concentrated on the organisational level, with limited reference made to the individual barriers. Little reference is made to the extent to which company car policy affects business travel decisions. For example, an entitlement to a company car may be based on a requirement for high business mileage, so staff may worry that greatly reducing their business miles could result in the loss of the entitlement to this benefit. Similarly, to what extent do car mileage expenses and allowances affect travel decisions? Anecdotally, it is suggested that particularly at the lower end of the pay scale, there is a culture in places like local authorities of using car mileage expenses as a top-up for low pay, which again provides a disincentive for staff to reduce their travel or travel by sustainable means. Understanding these barriers is important in working with organisations to overcome the barriers at all levels.

Of particular importance to this project are the implications for the London transport network. Although the LTDS provides a useful insight to the travel patterns of Londoners, it is limited to those who live within London. To fully understand the business travel patterns within London it is
necessary to understand the business travel patterns of those who work in London, but live elsewhere and those who work outside London, but travel into London for business meetings.

This review has shown that though there is some useful information on the costs of business travel through expenses data, travel patterns and the benefits of reducing business travel. There are still opportunities to develop a more holistic picture of business travel within London. There is a need to develop a clearer understanding of the business case, barriers and the implications of a change in business travel policy in the management of staff and facilities.

3 The methods and reasons for business journeys in London

This report now moves on to detail the findings of the research. This was undertaken in two phases. The first phase of the research was an online survey of business travellers who made journeys into and within London. The second phase was a series of face-to-face interviews with business travel, CSR or environment managers in eight businesses either based or with large offices within London.

The aim of this survey was to produce data to explore the travel patterns of individual business travellers and their reasons for travelling into London. This next section largely reports the findings of this survey.

The survey population was drawn from members of the NBTN, clients of TfLs Business Engagement department, staff at the OU in London and staff and students of the Maths, Computing and Technology Faculty from around the country. In total there were one hundred and fifty responses to the survey. Further details of the survey methodology can be found in Appendix 8.1.

The topics for the survey covered;

1. Where business trips were made in London
2. Trip length
3. Time of trip
4. Modal split
5. Purpose of business meeting
6. Availability of alternatives to a physical journey
7. Availability of lease car options
8. Take up rate of lease car options
9. Barriers to behaviour change

The following sections will concentrate on the results for modal split, the purpose of a business meeting, what meeting alternatives are available instead of a physical journey, the frequency of use of these alternatives and the barriers to the use of audio and visual meeting technologies.

3.1 Modal split and frequency

Understanding the modal split of the journeys made in London helps to develop a picture of the extent to which journeys are made by sustainable means, and whether there are opportunities to swap to other options such as electric vehicles. The modal split question asked about the mode of transport used to travel into London and the frequency of use of these modes. The figures have been adjusted to show the number of journeys per month. For example, where the frequency was
daily, the number of journeys was multiplied by five to give a weekly figure and then by four for a monthly figure. For 2-4 times a week, an average of three trips per week was used as the multiplier, which was then multiplied again by four. Once a week was multiplied by four, 2-4 times a month, multiplied by three, 1-2 times a month by 1.5 and less than once a month by 0.5.

The results of the modal split show that 81% of all journeys are made by the more sustainable means of walking, cycling, train, underground or bus, Figure 7. What is notable is the low car use, with only 16% of respondents using cars or taxis for business journeys, with most (5.9%), made in private cars and the rest in a company, pool or lease car and taxis.

What should be noted is that this weighting towards sustainable modes could be indicative of the survey’s sample, with 42% of respondents having some connection to the sustainable travel area. The modal split data in this survey is very different from either the data from the LTDS or the NTS data. For commuting or business travel, the GB-wide NTS data shows a car usage of 69% and the sustainable modes of walking, cycling, local bus and rail only accounting for 25% of the journeys (Department for Transport, 2009, chart 4.3, page 33). The LTDS data does not distinguish mode by purpose of journey, however, the modal split for all journeys in 2007/2008 shows that cars either as a driver, passenger or in taxis accounted for 39% of journeys, with the remaining 62% as public transport, walking and cycling (Transport for London, 2009, table 9.12, page 152).

For Central London alone there are a slightly higher proportion of journeys made by sustainable modes, (88%), and slightly fewer journeys made by car and taxi, 11.6%, of which taxis are the highest proportion at 4.0%. Within Central London no doubt the congestion charge or other issues such as the cost and availability of car parking or general congestion within Central London affect the proportion of journeys made by car.

Within Outer London the number of journeys made by sustainable modes is noticeably lower, at 64% of all journeys. This lower level is largely at the expense of bus and underground. Car journeys account for a much higher proportion of journeys at 29%, with own car contributing 13% of this total. Part of the remit of this project was to explore the potential for electric vehicle use in London. The modal split data tends to suggest that there is an opportunity to use electric cars for taxis in Central London area. However, there is probably a greater opportunity for electric car use within Outer London, where the alternative modes are less accessible and there is greater workplace parking capacity. The biggest barrier to greater use of electric cars would appear to be the high proportion of journeys made by private car. Switching journeys from private car usage requires both a change in company policy for car usage to one where pool and lease vehicles are encouraged, and these are then required to be electric vehicles.
Figure 7: Modal split by frequency per month, all journeys into and out of London

3.2 Purpose of business meeting

Having examined the survey data related to physical journeys the following analysis moves onto explore the results relevant to the alternative virtual means of meeting technology.

The first area to consider is the purposes of the business trips. Again the results of this question have been adjusted to show the actual number of journeys per month.

The literature review in section 2.8 outlined the types of meetings that are considered more or less likely to be substituted with virtual technologies. The meetings less likely to be substituted with virtual technologies include those that are more complex, with customers or external to the
company, or include many participants. However, internal or weekly and monthly meetings are more likely to be substituted.

Figure 8 shows the purpose and frequency of all the business trips in and out of London. It shows that the majority of meetings, for example external meetings with clients, suppliers and business peers, site visits, conferences and training, which account for 68% of all the meetings, are the ones less likely to be substituted by virtual meeting technologies. The most likely meeting type to be substituted is an internal company meeting, which are 24% of all journeys or 224 per month. Of these, 73% or 164 of the journeys are made weekly or more frequently. It is also interesting to note that of the client/customer meetings, 66%, or 120 of these journeys are made weekly or more frequently. Although meetings external to the company are likely to be harder to substitute with virtual meeting technologies, if these frequent meetings are held with the same customers, then there is a potential to work with organisations such as these to reduce the need to travel so frequently.

The other interesting point is the number of trips that are site visits, of which 75%, 104 journeys, are made on at least a weekly basis. These trips are less likely to be substituted by virtual meeting technologies, but this will be dependent on the reason for site visits. The opportunities are increasing to use technology to substitute for a trip through the use of tools such as remote monitoring or the use of geographically specific information on the internet, for example Google Streetview (Google, 2010). However, if these site visits are internal site visits, then their regularity suggests there is the potential to introduce electric vehicles to make these journeys if public transport is not an option.

The large number of daily ‘other’ trips is made up by visits to libraries, visits by bike to do cycle training and interviews. Potentially the first two could be re-classified as site visits and the interviews as meetings with business peers.

For Central London again the proportion of meetings that could more easily be substituted with virtual technologies is small, with those that are unlikely to be substituted accounting for 79% of all journeys. The high number of client/customer meetings (24%) and meetings with peers (17%) is likely to be indicative of the density of businesses within Central London. Again a large number of client meetings are held on a weekly basis, 63% or 72 journeys per week.

These figures show that there is still potential to substitute a large number of physical journeys for internal meetings, particularly the regular meetings, with virtual meeting technologies. The physical journeys that will be harder to substitute are those that offer networking opportunities, such as conferences or meeting with business peers. This type of face-to-face interaction can be important to build relationships. Networking opportunities can be valuable to business in helping to develop new business opportunities or re-enforce existing ones.
The findings of the online survey and the literature review were supported by the findings from the interviews in companies. Here the interviewees were asked which meetings they felt were more suitable to be done as face to face meetings. The preferred types of meetings listed below fit closely with those outlined in the literature review in Table 8.

- Long
- Complex
- Contentious or difficult
- Involve customers
- Involve lots of people
- Relationship building, especially when meeting someone for the first time
• Training, particularly practical work
• Where many documents are involved
• Where there are issues of respect or seniority

The reasons given why face to face meetings were preferred in these cases, was that even with telepresence it was harder to develop the same social understanding of someone. It was suggested that when you are meeting someone for the first time you are trying to fit them into a sort of social ‘pigeonhole’, so that you understand how best to engage with them. It was felt that VC created a form of glass barrier, or it felt very two dimensional, making it harder to detect body language and so engage with them and grasp the more subtle nuances.

Customer meetings, even when the relationship had been developed were still seen as a challenge, for two main reasons. Firstly few customers had VC equipment, or if they did it was not always compatible with that of the supplier. Secondly, customers who were paying for a consultant wanted to be able to see them, so they felt they were getting value for money.

**Video conferencing**

However, there were a number of instances in which VC or telepresence were seen, if not preferable, as an acceptable meeting medium. These included meeting that were,

• Short
• Frequent
• Internal, particularly team meetings
• For those working from home
• In preference to teleconferencing
• Customers where a good relationship had already been developed

The general comment from all the businesses was that VC was increasingly being used for internal meetings. The big challenge now is to switch more customer meetings to VC as well. It makes sense to tackle the internal systems and build a competence in that before trying to tackle the harder area of external customer and client meetings.

### 3.3 Availability of alternatives to physical journeys and frequency of use

If physical meetings are to be substituted with virtual meeting technologies it is important to first understand the availability of these technologies, then to explore how frequently they are used and to understand why they are not used more frequently.

Figure 9 shows that the most commonly available alternative meeting technology is not surprisingly teleconferencing, 35%. Teleconferencing has long been established as a virtual meeting technology, which is comparatively simple to use and cheap to install. It is interesting to see that desktop computer meeting technologies account for just over a third of the alternatives available. The more expensive video conferencing and telepresence suites are less commonly found.

The ‘others’ section included 5 responses where alternatives to a physical journey were not available, 4 normal telephone calls and the remaining were a mixture of webinars and email.
Figure 9: Existence of alternative meeting technologies

However, availability may not translate into actual utilisation. Figure 10 shows the frequency of use of the alternative meeting facilities. The results have again been adjusted to show the actual number of meetings. These totalled 1,253 non-physical meetings per month in the survey sample, compared to 939 physical meetings per month, so virtual meetings are already just in the majority.

Not surprisingly, teleconferencing accounts for nearly a third of all virtual meetings, of these 82% occur at least on a weekly basis. What is perhaps more surprising is that although desktop technologies account for 37% of availability, their utilisation rate is much higher at 52% of virtual meetings, of which 91% of this usage is on a daily basis. This is in comparison to video conferencing suites which are underutilised. They were stated to be available by 18% of respondents, but only used 8% of the time. Telepresence availability rates were much lower at 2% and utilisation levels at only 0.2%. Although the low availability and utilisation rates for VC and telepresence could be indicative of the survey population, it can still be seen as an indication that these meeting technologies are still comparatively fringe generally. The reality is that in offices employing several thousand staff, there may only be two or three telepresence suites, so inevitably potential demand will outweigh supply. This is a general problem with telepresence suites, where the numbers of suites worldwide in comparison to the size of the workforce are comparatively small. Possibly there is a potential to invest further in cheaper ‘desktop’ facilities that are more flexible, such as MS Roundtable (Keating, 2007) or other similar desktop video and document sharing hardware.
3.4 Barriers to the use of audio and visual meeting technologies

Having explored the availability and utilisation rates of a range of meeting technologies, the survey went on to explore the barriers and the severity of these barriers to the use of teleconferencing and video conferencing.
Figure 11: The importance of the barriers to the use of teleconferencing

The first question looked at the most popular form of virtual meeting technology, teleconferencing. Figure 11 shows the barriers to the use of teleconferencing, where 1 is considered to be not important and 5 as very important. In the graph in Figure 11 the two top colours, sky blue and lilac are the most important barriers to the use of alternative meeting technologies. What can be seen from these results is that in the majority of cases the issues are either considered not to be very important by a large proportion of respondents or that the distribution is fairly evenly spread. This is what would be expected from the results in Figure 10, which shows a high frequency of use for teleconferencing. However, the one issue that did seem to be a barrier to the use of teleconferencing was its ability to achieve the meeting requirements, where 55% of respondents graded the importance of this as a barrier to use of between 4 and 5.

When the importance of the barriers to the use of video conferencing is examined the pattern of barriers is very different.

Figure 12 shows a higher proportion of barriers rated as 4 or 5. The availability of video conference equipment was rated 4 or 5 by 66% of respondents, and 52% rated the ease of booking as 4 or 5. These two barriers could be linked. If the availability of the facilities is low this could be due to the lack of facilities as shown in Figure 9, or because there are physical difficulties in booking the
facilities due to the complexity of the booking process. The latter could help to explain the low usage levels seen in Figure 10.

Figure 12: The importance of the barriers to the use of video conferencing

Cost of installing the equipment emerged as an important barrier, with 38% rating this as very important (5). The large organisations in this study have been putting significant investment into either telepresence or high end video conferencing suites over the last five years and are continuing to do so. However, the capital investment can be prohibitive for some. The initial cost for these technologies can be between £100,000 up to £1 million for an auditorium type suitable for large conferences. However, the return on investment (ROI) is comparatively short. With a 60% usage of a suite it is around eighteen months to two years, but if the usage increases to 85-90% this falls to only nine months.

3.4.1 Comparison of virtual meeting technologies

Teleconferencing has been accepted as a mainstream form of communication and is heavily utilised. This is not surprising when you compare it to Rogers’ Attributes of an Innovation in Section 2.9. It has the advantages of being comparatively cheap, simple to install and use, compatible with existing systems and therefore relatively easy to trial. Because teleconferencing is highly utilised it is observable to many people. It also has advantages of being able to save time and money for a
physical journey. The one big barrier highlighted in this survey was the concern over its ability to achieve meeting objectives.

These benefits are in contrast to those of video conferencing suites that although offering a better quality meeting experience and offering a good return on investment if utilisation rates are high enough. The results of this survey still show that they are perceived to be expensive to install, relatively scarce so the opportunities to observe and trial are fewer, and have had an image of being difficult to use. These are still major barriers that need to be overcome if utilisation rates are to rise.

Desktop communication media has the advantage over VC or telepresence suites, in that it allows flexibility in how and where people work, and is relatively cheap and simple to install for both office and home use. These tend to be the types of technologies that are already used by ‘Generation Y’ in their home environment, for example instant messaging, desktop video such as Skype, social networking sites, virtual meeting rooms, for instance Second Life and mobile phones to access both telephony and the internet. The challenge is how to transfer this ability in the home environment to meet and build relationships virtually in a business environment. Business specific applications are available which are developing this area, for example webinar software such as ‘Elluminate’, ‘MS Office Communicator System’ and document sharing software such as ‘Live Meeting’.

### 3.4.2 New technological developments

The quality and choice of virtual meeting technology has improved dramatically over the last five to ten years. The increased adoption of broadband and Internet Protocol (IP) as a transmission medium has been a major factor in the improved quality and speed of communication.

One of the big developments is to allow people to communicate from anywhere with anyone, giving greater flexibility and mobility to people. However, the use of VC or telepresence suites restricts this mobility and requires the use of what is often scarce office space, which if the current trend of consolidating offices continues, will become increasingly valuable.

As businesses push to reduce costs and carbon emissions and to increase efficiency, greater interest is developing in ‘Green Computing’. As with any reduction in cost and carbon emissions the approach is twofold. Firstly, behaviour changes, such as reminding people to switch off computers at night and then technological improvements.

The new technological developments are designed to improve flexibility and mobility, whilst at the same time reducing carbon emissions. The ‘hot topic’ of the moment is Unified Communication and Collaboration (UCC), which is more of a strategy that uses technological developments. The idea behind UCC is to be able to link all the different communication media together. For example linking desktop video conference into a telepresence suite, making it easy for people to share documents, or for the author to be able to access them from any location. In an example quoted by BT using UCC, a pharmaceutical company was able to get products to market 10-15 days earlier and before the competition, making them additional hundreds of thousands of pounds by using virtual meeting technologies (BT Global Services, 2010).

The technological development is the idea of ‘Cloud Computing’, where data is no longer stored on PCs, but in the ‘cloud’ on servers. PCs become dumb terminals (thin applications), that are used to access the cloud. This approach has major advantages for business. It can help to improve security as
data is no longer carried around on laptops, USB drives or CDs, reducing the risk of loss or theft. The number of servers is reduced saving money and carbon emissions, and businesses only have to buy and maintain one license for software, also saving money and reducing support requirements. Importantly in relation to business travel, it allows users to access data wherever they are, at home, in a meeting or at a client site, with easy sharing of documents.

New technological developments and strategies are helping to improve the productivity of business by supporting greater flexibility so that people are able to communicate through a variety of mediums from wherever they are. The ability to link into a telepresence meeting from any location by a variety of medium helps to reduce that need to travel further, and improves productivity, as people only have to participate in that meeting for short periods of time.

4 Findings from interviews with business
The aim of the interview phase of the project was to develop a deeper understanding of business travel policy and practices and then to explore the drivers and barriers to the development of sustainable business travel policy. This section will first look at what support and engagement businesses would find useful to receive from TfL.

4.1 Support and engagement from TfL
On the whole, businesses were very happy with the transport network within London and realised that TfL did a lot of work to maintain and develop the network.

However, their big criticism was how difficult it was to find a point of contact for businesses, either through the TfL website or the switchboard. It was also felt that good engagement existed for travel planning, but that there was little to support the business travel manager.

Other comments about engagement suggested that business would like to know more about TfL’s strategic plans for the future and how they could engage in this process rather than being ‘passive observers’. These strategic engagement opportunities may already exist, but those interviewed were not aware of them and many were keen to be involved.

The business travel area appears to be an untouched part of TfLs engagement. However, TfL is in a unique position in London because of the extensive public transport network that supports business travel and the commute. There is an opportunity for TfL to engage with business by developing and marketing corporate products and working with business on the strategic plans for the network.

4.1.1 Oyster Cards
One potential corporate product was the Oyster Card. The Oyster Card was liked, but suggestions were made to improve the service such as introducing a corporate Oyster Card, or extending their capability, so that they could be used on River Boats and the airport express rail services. One of the reasons given for developing a Corporate Oyster Card is to allow for the collection business travel data. Although data on journeys made through Oyster Cards is available online to the users, there was a concern that printouts required for claiming travel expense also included personal journeys, and access to this personal data could be seen as corporate invasion of privacy. The result is that travellers either buy tickets for individual journeys, use taxis, (costing the company more), or that Oyster transactions go unclaimed preventing the accurate collection of travel data. A Corporate
Oyster card would thus both save money for businesses in London and help them to manage their business travel.

### 4.1.2 Travel surveys and engagement

Businesses wanted a flexible approach in how they engaged with TfL either for the commute or business travel. If the engagement was for the commute, they wanted to be able to choose whether to engage in a full commute management programme or whether to choose the parts that were relevant to their business.

This flexibility also included staff surveys. A theme to emerge from the interviews was a dislike of staff surveys, particularly from external bodies. Response rates to surveying were felt to be low and there were concerns about ‘survey fatigue’. Being forced to complete a staff survey as a prerequisite to support from TfL, especially when the business had no say in the questions included, is likely to hamper engagement. In one instance an inflexible approach to surveying from TfL had resulted in the organisation withdrawing from the engagement. Another concern was that the wording of survey questions can sometimes be seen to give the impression that the organisation is about to introduce a new initiative, which may not be the case. An example to illustrate the point was given by one of the interviewees. Asking a question as to whether you would like extra maternity leave, the answer is likely to be ‘yes’. Is the organisation going to offer it, ‘no, so why are you asking if I would like more’. This highlights the difficulties of developing a staff survey that will be appropriate for every organisation, and the need for the benefits of a survey to the business to be clearly defined, so that it is not seen as extra work for the organisation that is only of benefit to TfL. Even those organisations that had completed staff travel surveys had a reticence to surveying in general. Flexibility in TfLs approach to surveying is all part of giving the impression of being more ‘business savvy’. Ultimately, it is more important to engage an organisation in doing something towards managing transport than for them to be alienated by an intransigent approach to a survey.

Business attitudes to commuting surveys are in contrast to their desire to collect data on business travel, as illustrated with the desire for a Corporate Oyster Card. The difference here is that business travel information is critical to the operations of the organisation, and works within the processes of managing and booking business travel, rather than through surveys. Attitudinal data about business travel may be done through surveys, but also commonly obtained through feedback processes that are indicative of the communication culture within the business, such as generic email addresses to leave comments or at training and roadshow events. Staff travel surveys are externally-imposed processes, which can be at odds with the culture of the organisation.

### 4.1.3 Travel Information

An issue that came through as important to business is the availability of journey information. Businesses were looking for accurate and simple journey planning information. There were two main reasons for this. One was to reduce taxi usage and the other to support the re-location of staff after the rationalisation of office space.

Taxis are a big cost for businesses particularly in Central London. They are used between offices or from stations or airports, especially by visitors who are unfamiliar with London. The larger organisations were looking for a journey planning tool that enabled staff to make informed decisions about their route. They wanted a system that gave you clear details on how to get from A to B by all
the available travel modes, which also allowed you to compare the cost, time and carbon emissions of the journey. ITM suggested that an ideal system would also include the productivity or efficiency of each journey. Although online journey planners already exist, including TfLs, there was limited awareness of them and they do not necessarily cover all the information that the organisations were looking for. There is a need for better publicity of the existing tools and a possibility to develop a business tailored tool. This could be simplified, as businesses were generally looking for information on specific journeys, rather than any random journey within London.

4.1.4 Driver Safety
Driver safety was notably an area that was not discussed by businesses, although cycle safety was. However, it should be noted that driver safety was not necessarily within the remit of the business travel manager. It is more likely to fall within the remit of Health and Safety (H&S) and HR. Although there are links to advice for travellers about driving late at night or after long flights, this appeared to be the limit of advice within the business travel manager’s area.

Businesses were taking driver safety seriously, but it did not appear to directly affect business travel policy, for example it was not given as a motivation to encourage less driving and more use of public transport. The sort of comments were that it was an issue that has top level support, but in a functional way through training, guidance and checks on the grey fleet, rather than affecting business travel policy.

There are still opportunities to engage with business on driver safety, but in the bigger organisations with business travel managers, H&S and HR would be a better point of contact.

This report will now move on to give background information of use to TfL in developing a more in-depth understanding of how the business travel area functions within organisations

4.1.5 Organisational size and methods of public accountability
The process of engagement with business and their needs can vary depending on the size and type of public accountability of the organisation. Although there were a number of similarities in the comments made by the businesses regardless of size, there were also some distinct differences from the sample studied for this project (though the limited sample size makes firm conclusions problematic).

Small business

Small companies usually do not have a transport or environmental specialist. The motivation to develop a sustainable business travel policy is likely to be driven by the values of the directors and staff. Keeping travel costs to a minimum is seen as an imperative to maintain profitability, but there is often no specific travel policy to support this, it is ‘just the way things are done’. Little or no monitoring of the carbon emissions or cost savings occurs. The decision to pursue such a policy is based on a common sense belief that reducing miles travelled will inevitably reduce costs and carbon emissions.

Often the majority of travel within small companies is by ground transport. Desktop video conferencing is more likely to be used, but investment in video conferencing suites is unlikely to occur as there is insufficient demand.
The support wanted from TfL is basic, consisting of route planning information, possibly cycle stands and inevitably cheaper transport. Generally the smaller businesses did not feel there was a great need for additional support from TfL.

**Medium business**

In this research a medium-sized business was defined as one with between 200 and 2,000 staff. Businesses in the research of this size range had a different pattern of business use from organisations that were either smaller or larger. The main distinction was that these businesses had little or no air travel and what air travel there was, was domestic air travel. Their business travel was usually restricted to ground transport.

However, unlike small businesses, they had transport policies that encouraged train travel and the use of video conferencing. Video conferencing suites were seen to be a good investment for internal meetings between the different offices in the UK. Business travel was likely to be managed by an operations manager, whose responsibilities could also include the buildings, IT, environment and possibly fleet.

The support from TfL could vary from support to manage the commute through a travel plan, to ad hoc support to help develop initiatives or facilities relevant to the needs of the business.

**Large business**

For large businesses (over 2,000 employees), particularly those who are professional service providers, air travel will often be a big element of their business travel, and therefore potentially the biggest cost and carbon emitter. Air travel is usually managed through Travel Management Companies (TMCs), which are able to provide information on the cost and carbon emissions of travel. However, this does depend on the level of compliance from staff to use these tools. Generally information on ground transport cannot be captured this way except where trains are booked through TMCs, but booking compliance through the TMC can be lower for trains than air travel. Car travel is usually captured through the expenses system, and therefore can be harder to manage as it does not necessarily need a pre-trip approval. There is generally greater investment and use of video conferencing suites.

Large organisations will often have a business travel manager in an operations or procurement role. These tend to be senior managers responsible for the setting and implementation of the policy and strategy, and the management of large budgets. They often have strong links to other parts of the organisation such as Corporate Responsibility and Human Resources, and importantly are more likely to have top level support, which is in contrast to most travel planners.

**Public accountability**

As well as company size, there are other dimensions that affect the attitude of an organisation to developing and managing a sustainable business travel policy. Large organisations may be ‘Publicly Limited Companies’ (PLCs) and therefore responsible to their shareholders, and as such be required to produce annual reports.
‘Limited Liability Partnerships’ (LLPs) do not have shareholders and consequently are not required to produce the same reports, and so do not have the equivalent external pressures to reduce costs and carbon emissions. Although in this study, the larger LLPs were choosing to publicly disclose this information, partly due to pressure from customers, the Carbon Disclosure Project, and in the case of larger LLPs, the Carbon Reduction Commitment.

Not for profit organisations are perhaps the most interesting, as they are not responsible to shareholders and are not required to make a profit, as their title would suggest. One of the organisations in the study was a conservation charity and therefore worked hard to keep their carbon emissions down, but other people in the study who had either worked for, or had dealings with not for profit organisations, were surprised how unconcerned these organisations were about managing business travel, either to reduce costs or carbon emissions. This would tend to suggest that the requirement to be held accountable either publicly or to customers is a major motivator to develop sustainable business travel policies.

4.2 The drivers to manage business travel

Having explored the effect of size and public accountability on the development of sustainable business travel policies, this report will now move on to outline the drivers that emerged from the research.

These drivers appeared to fall into four main areas,

- Cost savings
- Customers
- Carbon emissions
- Productivity

There are also less direct drivers that involve technological advancements and how they affect the perception of working practices, which links into recruitment and retention. Specific incidents such as the volcanic ash cloud in 2010 can also be important.

4.2.1 Cost savings

Not surprisingly cost savings were a major motivation to manage business travel. However, this was not considered in isolation, but often linked with corporate responsibility issues, staff wellbeing and working time regulation and reputation. The balance between the importance of cost savings and the environment changed as a result of the recession. Before the recession the emphasis was to develop sustainable business travel practices, but understandably during the recession this focus switched to that of cost cutting. The feeling now is that sustainability is becoming a more important driver again.

The techniques to deliver cost reductions

One of the main approaches that businesses have taken to cut travel costs has been to reduce the class of air travel from business to economy class. For one organisation this decreased their travel spend in the first year by half. This was an approach that was introduced largely in response to the recession and was not intended as a method to encourage people to travel more sustainably. However, it can have the effect of making flying a ‘less comfortable experience’, encouraging people
to seek alternatives such as rail or substituting a flight with a video conference. Another organisation with an annual travel spend of £68 million is encouraging their staff to replace ‘one more face-to-face meeting’ with a virtual meeting. This is estimated to save the company £10 million a year (a 15% travel cost reduction).

**The reporting of cost savings**

The breakdown of reporting of cost savings from business travel is a complicated area. Most organisations only consider the bottom line savings, due to the complexity of identifying the origin of the savings. There are a number of contributory factors for the cost savings that include the recession, (which may result in reduced business activity), change in class of air travel, change in location of clients, the ash cloud and re-negotiation of contracts with travel and meeting suppliers.

Interestingly, potential improved productivity from train travel was not something that was factored into the costs. One organisation was working with Trainline to try to identify the productivity gains of travelling by rail instead of air or car, but only planned to use this information as a way of encouraging staff to use the train. However, legal firms that bill by small time units, may more easily see the advantages of travelling by train and using that time to do billable client work. Reducing car usage in preference for public transport was generally not seen to be a cost saving, but felt to be cost neutral. It was suggested by one of the participants that travelling by car was often the cheapest option.

The important thing to note is that reducing the cost of business travel does not necessarily reduce travel or make it more sustainable. Reducing the class of air travel will not necessarily reduce the number of flights taken. Reducing the class of travel on trains is more likely to encourage people to take other modes such as flying, due to the perception of flying being a quicker and often cheaper option.

### 4.2.2 Carbon emissions

However, not all businesses were driven purely by the desire to reduce costs. Another important driver for business was to reduce carbon emissions. Within the professional service provider sector, carbon emissions from business travel can be between one third and two thirds of their total carbon emissions. Companies are now potentially subject to a range of new carbon reporting frameworks. However, unlike electricity or gas usage, business travel is not covered in these regulatory frameworks, such as in the carbon trading scheme as part of the Carbon Reduction Commitment (The Carbon Trust, 2010), and only as a voluntary reporting element under Scope 3 within the Greenhouse Gas Protocol for vehicles not owned by the organisation (World Business Council for Sustainable Development and World Resources Institute, 2004). However, businesses were addressing their carbon emissions from business travel, partly because they realised it was a big element of their carbon emissions, but also as a result of pressure from their staff and customers, and reputational issues. But as with cost savings, carbon savings were not seen in isolation, but as part of a wider approach towards sustainability and an improved corporate responsibility offering that is driven by cost savings, but also linked into other areas such as health and wellbeing, productivity, recruitment and retention.

Nonetheless, it should be noted that many of the businesses in this study were in a position of wanting to lead by example, as they sold services to encourage sustainable business practices or
products that enabled virtual meetings. Also the process of recruiting companies for this research will have selected those that are more likely to be concerned about carbon emissions than the average business. However, the increase in internal concern about the reporting of carbon emissions does appear to reflect a wider growth in interest in the business communities in which they operate.

### 4.2.3 Customers

This growing interest is highlighted by the increasing pressure put on business by their customers to reduce carbon emissions. Customers are beginning to require information about their carbon management strategies, either as part of the procurement process, particularly from the public sector, and in the private sector through the supply chain or the Carbon Disclosure Project (CDP). Businesses are increasingly being asked to report through the supplier module of the CDP by their customers. For example in 2009, one organisation had only three of four requests from customers to complete the supplier module, but in the first quarter of 2010 they had already had a dozen requests. Many of the other large businesses gave similar responses.

What was less evident, but beginning to happen, is for customers to also question the amount of money budgeted into a project for business travel.

### 4.2.4 Productivity

Improving productivity, particularly in the recession, was an important driver for businesses; the concept of ‘doing more for less’. There were two aspects to increasing productivity. The first was to reduce the need to travel which saves on time, money, carbon emissions, and helps to reduce stress levels, partially by reducing the time out of the office or away from home. The second was when a journey has to be made, to make that journey more productive, perhaps by encouraging rail use so that it is possible to work on the journey, and maybe billing the customer for that work. However, in some cases it was accepted that flying was the best option. Here the productivity decision made was whether flying business class is more productive, as it enabled the traveller to land rested and able to work on arrival. These productivity decisions all contribute to a greater agility of a business and faster decision, which can lead to an increased speed of delivery of new products to market.

### Meeting management

It would appear that in some cases the use of video conferencing has begun to affect the management of meetings. Video conferencing draws people together from disparate places for a limited period of time, for example one or two hours. This time is constrained by the availability of the suites. This is in contrast to people travelling to a meeting who may be there for half a day or more with perhaps less immediate constraints on their time. To ensure that a video conference achieves its objectives within this limited time span, it is important to manage the meeting effectively. One organisation outlined this meeting management process. Before the meeting starts a realistic agenda was set that outlines the purpose of the meeting and what the objectives were. At the beginning of the meeting each attendee was asked to describe what they were bringing to the meeting and why they were there. This was thought to bring focus to the meeting. As further people experience a more formal meeting management process, and the more widely spread it becomes, the better meeting management in general should become.
Video conferencing and the commute

One of the concerns about the greater use of video conferencing instead of travelling to a meeting was that it could result in more people travelling to the office to use the facilities, possibly in peak times, and potentially causing greater congestion. This was a point put to the participants of this study. They all felt that this was not the case. This was mainly because organisations that were embracing the use of video conferencing were also embracing the use of technology to facilitate home working. The effect was that people were planning their work time more carefully to ensure that any meetings which required either meeting face-to-face in an office, or the use of video conferencing equipment, were done so on their ‘office’ days. The result was that people were planning their work time more efficiently. This is likely to a factor that contributes to the 31% increase in productivity from home working quoted by BT (BT Global Services, 2010). However, one organisation that was less supportive of telecommuting felt that people would naturally go to the office more if they were not travelling for business. It is therefore important to ensure any change in business travel policy is supported by other policies to manage internal meetings and working practices.

Site visits

Not all business journeys are for meetings, some will also be for site visits. One of the participants of the study was a building firm in Central London. As they did not have a depot or storage facilities, it was important for them to reduce costs and improve efficiency by arranging for all shipments of materials to be delivered directly to the site. This meant identifying local suppliers, which was particularly relevant for top up supplies that were done by bicycle.

Another aspect of site visits, particularly relevant for maintenance work, was to ensure that the job is done right the first time, to take away the need to make repeat visits.

Again improved productivity was seen as part of a integrated package to improve the efficiency of an organisation. But it is interesting that few organisations are looking at the monitoring of any increases in productivity from train use. The one business that was looking at this was not attempting to feed that back into the cost of the journey.

4.2.5 Technology

In the last five to ten years there have been big developments in both the quality and performance of video conferencing and telepresence suites, in desktop and mobile technologies such as 3G phones, Web 2.0, teleconferencing and social networking sites for instance Facebook and Twitter, all of which have driven a greater use of communication technology. The big challenge for business is how to use these technologies to improve communication and productivity, and to harness the potential of social networking meeting media to build and sustain relationships in similar ways to those used by ‘Generation Y’ in their personal lives. A repeated comment from all the participants of this research was that as more people come into the workforce who are familiar with these communication technologies, the more businesses are being pushed to use them in their day to day communications, as the question is asked ‘why do I need to travel when I can communicate virtually’? Within this research there signs that the perception of work is changing to one where the relationship between work and place was disappearing, although this will only be true of the sectors where home/remote working is a viable option.
4.2.6 Recruitment and retention

Recruitment and retention are also important drivers with a changing working demographic and the need to control costs such as recruitment. The recruitment and retention drivers for a business travel policy are similar to those you would see for a commute management programme. This is not surprising as the management of the commute and business travel can have similar objectives, such as reducing the need to travel and the time spent away from home, so improving the work-life balance. This can be of particular importance for an aging workforce who are less willing to travel, or women returning to work after maternity leave, who may not be as willing to spend time away from the family.

A business travel policy that shows the organisation cares about their staff and the environment can help to attract the best talent to the organisation. A frequent comment was that the younger generation coming into work from university, were looking for organisations that had good environmental policies. One organisation that encouraged cycling to their customer sites felt that this policy showed that ‘they cared’ and helped to attract the ‘right sort’ of staff to the organisation.

4.2.7 Volcanic ash cloud

In May 2010 all flights into and out of UK airports were grounded for approximately two weeks due to a volcanic ash cloud. This caused disruptions to business travellers and the operations of business, highlighting the vulnerability to business continuity. However, there were advantages to business too. The disruption became a motivation for people to change their business travel behaviour. People who had previously not used VC communication began to look at this as an option. Regus, who hire out VC and telepresence suites, saw their business increase by 236% during the flight disruption. Towards the end of May this has dropped back by 50%. The businesses interviewed in June had found that people were less willing to fly and were looking for alternatives, for instance ground transport or not travelling at all and using virtual meeting technologies instead.

One important issue that was highlighted when so many travellers were stranded was their vulnerability if they had not booked their journey through the official booking systems. The official booking systems ensured that the organisation knew where the staff were, and how to get in touch with them to support them in their journeys home. Booking outside the systems meant that this information was not available and support was much harder to give. It was also a learning experience for TMCs in how to cope with a large volume of queries, highlighting the need to make information available online. Another approach suggested to cope with the vast number of calls was not to accept incoming calls, calling the travellers directly instead. However, for this to work, it relies on travellers booking through the travel portal and supplying contact details.

The whole situation of the ash cloud, although a difficult time, had the benefits of encouraging people to try different virtual meeting technologies, look for alternatives to flying, and to improve compliance with the use of the booking tools, so that businesses are better able to monitor and manage their business travel. The challenge, as with the reductions in business travel due to the recession, is how to embed this behaviour change in the long term as travel begins to increase again. At the time of the study it was too early to tell the extent the ash cloud had changed behaviour permanently.
4.3 The barriers to embedding a change in business travel policy

As well as drivers encouraging a change in business travel policy, there are also some barriers that are preventing change. These fall into three main categories,

i. Individual behaviour
ii. Customers
iii. Internal culture

4.3.1 Individual behaviour

One of the biggest barriers to sustained behaviour change was that of individual behaviour. Most of the businesses in this study had a mixture of ‘hard’ mandatory policies and ‘softer’ policies to encourage behaviour change.

Habitual behaviour

Habit plays a large part in preventing behaviour change. People are used to meeting face-to-face, so they need continual reminding, motivation and controls to break this habit. This is likely to be more true of the older members of the workforce, who as well as having formed habits, may be more unwilling to use virtual meeting technologies either through a dislike, fear or unfamiliarity with them. This can also be true when encouraging a modal shift away from air or car. Air and car travel are often perceived as more convenient, reliable and quicker than rail. Notably, where the recession has been a driver to reduce travel costs, it can also be a barrier due to employees reverting to old and familiar habits. This may be a fear for job security where people are working out of sight at home, or for lost business, engendered by not meeting clients face-to-face.

Status Symbols and Perks

Elements of business travel are considered by some as status symbols and perks, such as business class on flights, taxi use and the company car. In certain sectors, it has been hard to remove these perks, which has led to industrial relations issues. These sorts of perks can be seen as a way a person is defined, giving them status in their role. These problems are not unique to a change in business travel policy, but are seen in other change programmes, for instance a travel plan that removes a directors allocated car parking space or in the implementation of virtual teams, where a manager no longer has a team sat around them or the ‘big office’.

4.3.2 Customers

Notably, whilst customers are a driver for change they can also be a barrier. As previously mentioned, customers can feel that they are paying for ‘face time’ and therefore expect to see their consultant or supplier. Not all customers have VC equipment, particularly if they are a smaller company, what they have may not be compatible with their supplier’s equipment, or they are unwilling to use it for supplier meetings. According to Regus there are currently 900,000 VC suites within companies around the world, but only 3,000 are publicly available (Polycom and Regus, 2010), making it hard for smaller companies to gain access to the facilities, although the number of publicly available suites is increasing, especially in the US.

Changing the attitude of clients to reduce the time spent by consultants on site is a particular challenge in areas where sensitive or confidential material is involved, for example in the MOD or
HMRC. In these instances clients require their suppliers to work at the site to ensure data security, for projects such as computer development or audits. This increases the level of business travel, more of which may be done by car, due to the risk of computers being left on trains or the possibility of sensitive data being overheard or viewed by other passengers on public transport. The other problem is that in some cases customers are asking their suppliers to undertake the journeys they used to make themselves, pushing the carbon emissions down the supply chain.

The important first step is to manage the internal meetings either by modal shift or substitution, in the process develop a competence in and culture of reduced travel, and then begin to work with customers to reduce the external business travel. There is however an important role for customers to consider carefully what they are expecting from their suppliers.

4.3.3 Internal culture
As with individual behaviour, the culture of an organisation can be both a barrier and a driver. An interesting example is in project teams responsible for their own budget. Long running projects may have been set up with a substantial travel budget. As the money is already there they see little need to change behaviour. There can also be a culture of travel within the project that is unchallenged or encouraged by the project lead. In some cases an attitude may exist that because the project is bringing in money, there is little need to reduce costs. These attitudes are symptoms of controlling business travel purely by cost; if the money is there and someone else is paying for it then why not travel. In these instances a carbon budget or target would be useful to support behaviour change.

4.4 Policy and communication methods to support behaviour change
A strategy to reduce both the financial and environmental impacts of business travel will inevitably involve a range of policies across an organisation. A first step in a strategy to reduce business travel is to where possible, use local resources. This is as true for international as for national business journeys. Several of the organisations in the study mentioned that they resourced people from Scotland for projects based in the South of England. The use of local resourcing is a strategy that BT implemented in London 12-15 years ago. They looked at the postcode locations of all their employees and main customers, and used this information to deploy a new building strategy to create hubs. This had the effect of minimising the amount of travel and produced a logical spread to the buildings to give good access to other regions. This strategy saved in the region of 18 hundred years of travel time (Roby, 2010). Therefore a strategy to reduce business travel can in fact also be a resourcing strategy.

In some cases business travel or meetings between different locations cannot be avoided. In this case further policies are developed to manage these journeys. The policies can be a mixture of ‘hard’ policies of rules and regulations and a ‘softer’ approach of supplying information and educating. The choice of which will be dependent on the culture of the organisations. This approach is similar to that seen with travel plans or any change management programme within business. It was felt that in some organisational cultures, it can be harder to implement change when it was seen to be an ‘edict from above’.

4.4.1 Travel policies
As described earlier, much of the focus for larger businesses in their business travel management can be on air travel. Sustainable business travel policies are often supported by a travel hierarchy as
outlined in Section 2.8, of reducing the need to travel, substituting or replacing travel with a virtual meeting, then if there is no option but to travel, finding the most sustainable method and finally in some cases offsetting. The sorts of phrases used to promote a hierarchy include:

- ‘Conference instead of travel, carshare or use Trainline’
- ‘Measure, minimise, offset’.

Some businesses had made booking flights harder to do and either encouraged or insisted that any journey time under between three to five hours had to be made by train. Reducing the class of air travel is obviously a cost cutting exercise, but if 1\textsuperscript{st} class rail travel is offered instead, this can be an incentive to encourage rail travel. Nevertheless, the policy needs to be designed so that this does not lead to a conflict between cutting costs and cutting carbon emissions. Some businesses had also prevented staff from travelling by first class rail, which could increase domestic air travel, as standard class train travel may be seen to offer fewer benefits from journey time or comfort.

For ground transport, the emphasis that emerged in this study was managing taxi use. Employees were encouraged to use ‘green’ taxi companies such as ‘Green Tomato’ or to use pool cars. More work was being done to ensure that taxis were booked through a taxi booking system, which can support taxi sharing, ensure better data collection and ultimately better management.

4.4.2 Sustainable business travel messages

To deliver and sustain behaviour change, policies need to be backed up at every stage of the process of booking a meeting. Some organisations within their ‘Outlook’ diary give messages to encourage staff to hold virtual meetings, for example, when the meeting invitation is sent out suggesting the meetings should be held as a ‘Live Meeting’ or as a teleconference. In some organisations, before staff are able to book a business journey they have to go through what is sometimes a lengthy authorisation process. This can be useful in challenging whether a journey needs to be made, whether it will deliver an acceptable return on investment on the travel expense and the mode of transport used. However, the process may not always be used to challenge the sustainability of the journey. The process may only challenge the cost and is reliant on the authorising person adhering to the relevant policies. It has the danger of becoming a counterproductive administrative exercise.

Once this authorisation has been gained, staff enter the travel booking portal, often administered by a TMC, to book their journey and accommodation. At this stage there is a further opportunity to encourage sustainable and thrifty behaviour. Most include a message suggesting the use of video conferencing, but if a physical journey is the only option, the tool will then give the comparative costs of the journey options, and some now also include the carbon emissions. A popular tool was the idea of a ‘carbon ready reckoner’, to allow employees to see the carbon emissions from different choices of travel and empower them in their decisions. However, the success of a ‘carbon ready reckoner’ in changing behaviour is dependent on the accuracy of the data and the culture of an organisation that empowers people to change behaviour rather than dictating change.

4.4.3 Messaging

One of the big challenges in delivering behaviour change is firstly to decide what that message should be and then to communicate it to the staff. In the age of digital media it has become increasingly hard to get messages heard over all the other ‘noise’. Newsletters used to be produced on a monthly or even quarterly basis on paper. Therefore the number of messages was limited. With
digital communication these newsletters, although more up to date, are far more frequent, sometimes daily, so there is a danger that employees will ignore a large number of them unless they are delivered in unique ways. This is not a problem exclusive to sustainable travel, but the same with any behaviour change process or delivery of messages within business.

To overcome this problem, the business travel managers in the study used a range of measures to raise the profile of the message, which included:

- environmental office champions
- incentives
- carbon accounts

Environmental office champions work to raise the profile of all the sustainability messages within a business, but can be a good route to raise the profile of a particular travel message.

**Incentives**

The attitude towards incentives varied greatly between organisations. One organisation said that they did not feel it was appropriate to give incentives to employees that encouraged them to do things that they should be doing as part of their daily work anyway. One organisation was looking at ways to reward individuals with prizes or vouchers for those who had either reduced business travel or increased their use of VC. Another suggested linking bonus payments to how much you travel. Other methods were more philanthropic, such as awarding areas of rainforest to business groups who reduced their travel or emissions. This also drew upon collective peer pressure through a ‘friendly’ inter departmental rivalry - a potentially powerful combination. An alternative approach was to associate the reductions in air travel with the WWF brand to ‘help people feel good’.

It appears that there is potential for employers in London to learn from each other about effective incentive strategies.

**Carbon accounts**

Within this study, there were several organisations with relatively advanced strategies to reduce the carbon emissions from business travellers, and there may be scope for TfL to aid in the transfer of such systems to other companies. Specifically, as part of the incentive process, one organisation produced carbon accounts and targets for the business units or departments. Another organisation went further, producing carbon accounts for the 1,600 most prolific business travellers and used these to challenge them to reduce their travel and carbon emissions. A figure that was mentioned on several occasions was that 20% of employees were responsible for 80% of business travel.

Targeting the top travellers through carbon accounts, or following up transgressions from the policy with individuals and team leaders in an attempt to re-iterate the policy, is likely to be more effective than a blanket approach to all staff.

What is clear from the comments made was the need to keep reinforcing the messages at every opportunity through such things as storytelling, policy, information and training. This requires a joined up approach to the setting and delivery of strategy from a range of departments including IT, HR, travel and CSR.
Facilities to support the business travel policy

There were also a couple of points raised about the sorts of facilities available within an organisation to support the business travel policies.

Carshare

Interestingly, only one organisation mentioned a car share scheme for business travel, where an additional 5p per mile was given for each additional passenger. Since the launch in 2002 the scheme had saved the organisation 18 million kilometres, which is roughly equivalent to £4 million over the eight years.

Linking carsharing to business travel seems an undeveloped area with an important potential. Although this may not be particularly important in Central London, it will be of greater relevance in Outer London, but also to businesses based in London with offices elsewhere in the country.

Train booking and ticketing

Others mentioned that they now included Trainline within their travel booking portal and one organisation had a printer specifically designed to print train tickets. These printers were thought to be expensive by some and therefore not considered viable. The purchase of train tickets can be a barrier to switching from air to train. It can be easier to buy and obtain tickets online for air travel than either buying tickets at a station or online and waiting for them to arrive in the post. This can be a barrier to increased uptake of advanced cheaper rail tickets, when going to the station on the day of travel is the easiest option, but certainly not the cheapest. The ability to print rail tickets on any standard desktop printer could be a way to overcome this, as is already the case on some European rail services such as Swiss Railways. Chiltern Railways have trialled a similar system allowing you to download tickets to mobiles or print at home, but this is poorly promoted and at present can only be used on Chiltern Railways. There was concern that printing tickets prior to travel could result in more lost tickets, as can be the case with aeroplane boarding passes, but this would also be true for rail tickets bought in advance and sent through the post.

Document scanning

The need to digitise paper document is a particular problem in the legal sector and also experienced by the Co-operative Society, with so much information still held in paper format. Meetings sometimes have to be held face-to-face in order to share the documents. The Co-operative Society has seen the move to a new office as an impetus to clear out documents that are no longer needed and to digitise what is left (The Co-operative Society, 2010). This has obvious space saving benefits and improves the security of information from floods and fire.

For the legal sector a lot of the documentation is stored offsite, so there are space and cost saving advantages, but also time, efficiency and carbon savings to be made by not shipping documents to and from storage.

Many of the organisations in this study have developed some innovative and effective ways to deliver and sustain a change in business travel behaviour, some are now beginning to apply this experience to the commute as well.
4.5 Commuting

Part of the aim of this study was to understand the extent to which the commute and business travel are linked, and whether this opens up opportunities for TfL after first working with organisations on business travel to then engage with businesses in managing the commute as well.

The organisations were asked about their policies to manage the commute. The general feeling was that the commute was ‘low on the radar’ of business.

Motivations for managing the commute

However, many of the larger businesses in the study were now beginning to manage the commute on a voluntary basis. The main reason given for this was that it was the next obvious step after managing business travel. There were several reasons for this:

- All the large businesses interviewed had either moved to new offices or were in the process of consolidating their office space.
- Businesses using virtual meeting technology for business meetings, saw that telecommuting was an obvious extension of this, hence the management of the commute, particularly with a blurring of the edges between commuting and business travel when an employee’s place of work was their home.
- Businesses that were actively working to reduce their carbon emissions, were beginning to accept that carbon emissions from the commute were also their responsibility, and linking them to their carbon reduction targets. This may be prompted by the impending change in the reporting of Scope 3 emissions.

Where the management of the commute was occurring on a voluntary basis, it was most likely to be led by the Sustainability or CSR team rather than Facilities Management, as is seen through planning-driven travel plans. In this case the programme is situated at a higher level of the organisation and links strongly into strategic policies of managing carbon. Typically, the programmes were within the remit of the Business Travel Manager, although they were aware of it and working with the CSR team. The willingness of organisations to manage the commute on a voluntary basis was very dependent on the culture of the organisation. One organisation purposefully did not manage the commute as they felt that it was too much of an invasion into the personal lives of their staff, and were concerned about the tax implications from benefit in kind of supporting a commuting programme. Another major barrier was that other issues, particularly around business travel, were a higher priority at the moment.

The small organisations did not have any specific commuter policy, but found that people travelled sustainably anyway, because they were based in Central London and either used public transport or cycled.

One point that was agreed on by all the businesses in Central London was that they accepted they did not have car parking spaces and therefore people would not drive to their offices. This was supported by the good transport system and the congestion charge, which combined together made the concept of driving into London ‘ridiculous’.
Links to working practices and business travel

What is becoming evident is that working practices, business travel and commuting are starting to be linked together. This is not surprising when there are overlaps in the initiatives used such as carpooling or sharing, Bike to Work schemes and telecommuting. Although location is an important factor in the numbers commuting, the levels of business travel and commuting together are likely to be more dependent on the type of business rather than the location. There is perhaps an inverse relationship between the commute and business travel. Businesses that have high levels of business travel for meetings, for example professional service providers, are more likely to introduce telecommuting, not surprisingly as the concept of remote working for meetings is already considered the norm. Therefore, as a proportion of employees, have lower levels of commuting. In contrast, a business that has lower levels of business travel, and therefore the concept of remote working is less well established, may have much higher levels of commuting and policies to promote modal shift are more likely to be of relevance. When working with organisations to manage the commute, it is therefore important to understand the ‘type’ of business they are as well as the location.

This would suggest that businesses that already do a substantial proportion of business travel are more likely to be interested in support and guidance on telecommuting, whilst those who do limited business travel and/or have higher levels of commuting, advice on modal shift may be of greater interest.

Using TMCs to manage commuting initiatives.

If business travel and commuting are beginning to be linked together, it would suggest the possibility to outsource some of the activities such as the supply of Oyster Cards, rail season tickets or Bike to Work Schemes to a TMC or an expenses management company. However, as there are no corporate deals from the suppliers of Oyster Cards and rail season tickets, the purchase of these through a TMC would add cost to the process, without any substantial business benefit to either the corporate or the TMC. For the Bike to Work Scheme, outsourcing the management of this would be dependent on how the business is set up. Those organisations that already have in place the systems within HR and payroll to administer a salary sacrifice scheme are unlikely to find this of benefit, but perhaps for smaller organisations it could be of use.

There could also be a potential for TfL to work directly with TMCs to develop systems that support sustainable business travel policies. However, in reality this approach is likely to be of limited success. The TMCs are driven primarily by what will deliver profit and by their customer needs. A number of the sustainable initiatives, such as the inclusion of online booking for rail tickets in the travel portal, were driven by the customers, as the TMCs make little money from this process.

5 Electric vehicles

Part of the remit of this project was to understand how business viewed using electric vehicles within their operations. On the whole, the concept of electric vehicles was well received with many of the large companies in the study already running trials of them.
The biggest concerns surrounded the recharge times, the reliability of the technology and cost and re-sale value of the vehicles. There were some constructive suggestions to help overcome the recharge issues. One was to offer an emergency ride home if people had driven to another office, and the car was not charged for their return journey, due to a need to leave earlier than planned. An interesting suggestion was to show on satnavs where the nearest vacant charging point was. (There is a business potential to develop this or perhaps an app for an iPhone). There were frequent questions about the potential to have a battery exchange system to overcome the recharge time. Without overcoming the recharge problem businesses questioned how electric vehicles could be practical in a commercial environment.

Concerns were raised that both the car and the charging technologies were still three to four years away from being commercially viable. The other issue raised, specifically within Central London, was that as the offices had no parking, they struggled to see how the vehicle space for charging could be accommodated.

Within Central London the main use of EVs was seen to be in taxis and hire cars. There was a reticence to invest in the cars by the organisations. The businesses preferred the lease or hire car options. Car Clubs also have concerns about the commercial viability of the electric vehicle model, due to the down time for recharging, resulting in the vehicle being unusable for long periods. They see hybrid electric vehicles as a more viable option. This is an issue that would also apply to taxis. Another issue with taxis is that for many taxi drivers, the journey into London to start work is the longest journey they make during the day. The need to recharge the car in London before starting work would not be practical.

One of the other problems that the car clubs have found in trials of electric vehicles is that Car Club drivers are often infrequent drivers, so the introduction of a different technology can be one step too far for the users. The introduction of the innovation of a car club system is already a big step and then to follow this up with a different vehicle technology can be too much of a barrier for some users. However, the businesses interviewed that used Street Van, were very positive about the idea of electric vehicles. This could be because they were already familiar with how a car club works, relatively environmentally conscious and only drove short distances, so electric vehicles matched their philosophy and business needs, but also they saw them as a potential selling point.

It appears that there are some niche pioneering business travel markets for EVs, but that in general businesses do not see a rapid widespread use. One clear point is the need to get the charging technology right, as with any new innovation, if people have a bad experience with it they are unlikely to try using it again.

6 Recommendations
As a result of this study there are a number of recommendations. These fall into 4 main categories,

1. Engagement and support
2. Staff surveys
3. Ticketing
4. Technology
5. Business drivers

6.1 Engagement and Support

Promotion of existing programmes

One of the clear messages to come from the research was a need to promote the programmes that already exist within TfL. These include:

- How to contact the Business Engagement team, with obvious links on the website and greater awareness of their existence through the switchboard.
- Promotion of and business support for existing programmes. Those highlighted in the research included journey planning tools and the opportunity for business to be involved in the strategic planning of the London transport network.

A new way of engagement

There is also an opportunity for TfL to engage with organisations in a new way. For example, the focus of the Business Engagement Programme could be clarified to develop beyond supporting sustainable commuting practices to include all forms of corporate travel. Engaging with parts of the business such as the business travel manager or a CSR manager has the advantage of engaging at a higher and more strategic level of business that have top level support, which has rarely been the case with commuting.

Promotion of innovative practices

There is an opportunity for TfL to promote examples of innovative and good practice that emerged from this study. For example, these include:

- The use of a higher rate of expense payments for car sharing
- The use of carbon accounts for frequent business travellers
- The use of carbon targets for individual business units
- Efficient meeting management strategies
- Inclusion of advice to consider virtual meeting technologies first when booking a journey

It could be of benefit to work with the LSA on this, as it is an area that they are developing at the moment.

The reporting of carbon emissions

The reporting of carbon emissions particularly from business travel, but also increasingly from the commute appears to becoming an important issue for businesses. There is an opportunity for TfL to develop guidance for businesses on ways to monitor and report carbon emissions from transport.
Car parking

Notably, a lack of car parking within Central London was not seen as an issue, but accepted as the norm. Therefore a business case presented for managing the commute based on a reduction in car parking capacity is unlikely to be successful. Even in outer London the case will be hard to prove as most organisations struggle to manage the existing capacity, and even if they do manage to reduce car parking capacity, there is little chance of realising any financial gains from the space reduction.

Car sharing

There would appear to be an opportunity to promote car sharing for business travel as within the study there was little awareness of it.

6.2 Staff surveys and iTrace

What became evident was a dislike by business of doing surveys. Although a lot of data is collected for business travel, this is not done through surveys, but through the booking and expense management tools.

The implication for TfL is that iTrace surveys should be kept to a minimum to obtain baseline data. The choice of the questions within the survey should be flexible to give the organisations the ability to veto any questions they deem in appropriate. Engagement and support from TfL should not be dependent on the completion of a survey. Insistence on a survey can be a barrier to any further action from the businesses. The problem is that staff travel surveys are often outside the normal processes of organisations, and produce information that may be of no benefit to the business. This can make it hard to justify the time and effort spent on them, unless the survey can be demonstrated to be a useful tool to the business.

6.3 Ticketing

There was a lot of interest from organisations in the introduction of Corporate Oyster Cards that could be purchased easily in bulk and used only for business journeys. This would have the advantage of overcoming the tax implications of benefit in kind and give business the ability to gather data and better manage the travel within London.

For the commuter, Oyster Cards offer a flexible approach to the purchase of tickets that support flexible working practices. However, rail ticketing does not offer this flexibility. There is an opportunity to develop a discounted ticket that allows travel for something like three days out of five, or a carnet type system, as opposed to the current season tickets that encourages travelling into London for all five days. This would also be of benefit to the business travellers who may travel into London for meetings two or three days a week.

6.4 Support and advice on virtual meeting technologies

Virtual meeting technologies are beginning to be seen as an alternative to a physical journey for both business travel and the commute. There is an opportunity for TfL to offer guidance on the technologies that are available, their capabilities and the business benefits from their use.
Figure 13: Summary of business benefits of different types of meeting medium

Figure 13 shows a summary of some of the benefits of the different meeting medium, where audio or teleconferencing is the most attractive option being the most accessible, cheapest and producing least carbon emissions. This is in comparison to external face-to-face meetings at the other end of the scale, which require a journey, so are least accessible, costly and potentially the most polluting.

6.5 Business drivers

The business motivations that TfL should focus on for developing an engagement strategy that includes business travel are:

- cost savings
- productivity gains
- carbon reductions

Businesses have used a range of policies to improve one or all of these areas. The Table 10 shows how each of these policies affects these areas.

Clearly the areas to concentrate on to bring the biggest gains are reducing the need to travel by either the use of local resourcing or substituting a journey with a virtual meeting. However, these are likely to be the hardest to implement as they require both strategic and behavioural change within business.
<table>
<thead>
<tr>
<th>Policy</th>
<th>Cost savings</th>
<th>Productivity</th>
<th>Carbon reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce travel through local resourcing</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Reduce travel by substituting with a virtual meeting</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Reduce class of travel</td>
<td>+</td>
<td>-/=/</td>
<td>=/+</td>
</tr>
<tr>
<td>Shift to more sustainable mode of travel</td>
<td>=</td>
<td>=/+</td>
<td>+</td>
</tr>
<tr>
<td>Carbon offsetting</td>
<td>–</td>
<td>=</td>
<td>+</td>
</tr>
<tr>
<td>Business as usual</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

**Table 10: Impact of business travel policies on cost, productivity and carbon emissions**

This report has given information on the policies and practice of business travel within organisations in the London area. This puts TfL in a better position to understand the business travel sector and to be able to engage with the area in an informed manner.

This study has shown that engaging with business through the business travel and strategic planning of the London transport network opens up opportunities to work with organisations in a different way. There are also opportunities to engage with business in developing voluntary commute management programmes that support key organisational goals of reducing carbon emissions, cutting costs by consolidating office space and extending flexible working practices, which can help to improve work/life balance and staff wellbeing. The large management consultants or professional services providers are already beginning to work in this way, but there are opportunities in other sectors such as the legal profession to develop this further.
7 Bibliography


JAMES, P., HOPKINSON, P. & HILLS, S. (2005) Conferencing at BT, SustainIT & the University of Bradford, London and Bradford,


MOKHTARIAN, P. L. (1997) Now that travel can be virtual, will congestion virtually disappear? *Scientific American*, Transportation special issue, 93


ROBY, H. (2010) *Using innovation and business models to analyse the organisational embedding of travel plans*, Department of Design, Development, Environment and Materials, Milton Keynes, Open University, PhD.


8 Appendix
This section will outline the research methods and the characteristics of the organisations within the study.

The study was completed in three phases

1. Online survey of business travellers
2. Interviews with stakeholders
3. Interviews with private organisations.

8.1 Online survey

In order to collate quantitative data on the journeys made by business travellers within London an online questionnaire was developed for administration through Survey Monkey.

8.1.1 Survey Design

The survey was designed based on the criteria set out in the project outline that specified the inclusion of the following items,

1. Where business trips are made
2. Trip length
3. Time of trip
4. Modal split
5. Purpose of business meeting
6. Availability of alternatives to a physical journey
7. Availability of lease car options
8. Take up rate of lease car options
9. Barriers to behaviour change

The survey was developed in Survey Monkey to allow ease of access for respondents through a weblink included within an email. Question 2 on page 1 is designed as a filtering question so that the data relating to time of day, distance travelled, reason for journey and modal split can be analysed separately depending on origin and destination of journey. Different collectors were set up depending on the distribution source, to allow the analysis of data from each source separately if necessary.

The survey was piloted with a small group of business travellers and then with the staff within the Smarter Travel Unit at TfL. Small alterations to wordings and question options were made as a result of these comments.

8.1.2 Choice of distribution routes

There were several potential options for the distribution of this online survey. The first was the NBTN, whose support had already been agreed. The survey was distributed to the 236 private organisations who are members of the NBTN. It was hoped to distribute the survey to the members of Business in the Community (BiTC) as well, but due to some internal political issues at BiTC and concerns that the members had been asked to complete a number of surveys in the recent past, it was not possible to gain their support.
ITM was also approached, but because of their relationship for research with Argate Consulting they are only able to distribute surveys for a fee of £10,000, which is beyond the budget of this project.

The survey has also been distributed to the 91 clients of the Sustainable Travel Unit at TfL and the staff at the Open University in London and within the Maths, Computing and Technology Faculty (MCT) around the UK.

Distributing the survey to NBTN member and TfLs clients is likely to put a bias on the results in that the respondents are likely to already have an interest in sustainable travel and more likely to use sustainable modes. However, the inclusion of staff and students at the Open University gives a much more typical range of business travellers. Distributing to TfLs clients and the Open University in London ensures that London travellers are included in the survey. Whereas the inclusion of the NBTN and members of a faculty and students based across the UK, ensures that the survey includes a good spread of respondents from a variety of geographical locations travelling into London.

A total of 150 responses were collected across the sources. To clarify some of the responses in the surveys five people were interviewed. It should be noted that within these interviews it became clear that the quality of responses in the survey was questionable, as several changed their reply saying they had incorrectly filled in the survey.

8.2 Stakeholder interviews
The next phase was to interview people within stakeholder organisations to obtain a wider perspective of the business travel area and background information. The topics covered in these interviews were,

- How the business travel area has changed in recent years
- What are the likely to be the developments in the future
- What are the drivers for change towards a more sustainable business travel policy?
- What are the barriers for change towards a more sustainable business travel policy?
- Are there any identifiable characteristics of organisations that have developed sustainable business travel policies?
- Were there any organisations that they would recommend as useful examples for the study

Largely telephone interviews were arranged with the interviewees lasting approximately half an hour.

The stakeholder organisations interviewed at this stage were Institute of Travel and Meetings (ITM), WWF, CarPlus and the Legal Sector Alliance (LSA).

ITM was chosen as the primary practitioner led organisation that supports the business travel and meeting industry, WWF for its work in reducing corporate air travel through the ‘One in Five’ campaign, and the LSA because of the work it does to promote sustainable business travel practices with the member organisations. CarPlus was chosen to explore the issues of electric cars within the car club environment.
8.3 Organisational interviews

The aim of these interviews was to develop a range of examples of businesses that were managing their business travel or site visits in sustainable ways, and to develop a better understanding of the practices and policies to support the strategies.

Contact with the organisations in the study was made through stakeholder organisations, particularly CarPlus and the NBTN. Because of the association of NBTN with Business in the Community (BitC), many of the initial points of contact were through the CSR or environment areas. In the large and medium organisations, those interviewed were predominately Business Travel Managers, but also included environment managers responsible for transport, and an operations manager who had responsibility for IT, the environment and business travel.

A total of eight organisations were interviewed, which were, Accenture, Beachcroft, Build Team, BT, BTCV, Capgemini, KPMG and PWC. Five of the organisations were large professional services or telecommunications providers, employing over 2,000 staff in London alone. One was a legal firm employing around 1,500 staff in total and the remaining two were small organisations, one a builder and the other a conservation charity. The large organisations had separate business travel managers and the majority of their business travel was from international flights. The smaller legal firm concentrated on domestic ground transport and the two smaller firms their business travel was largely from site visits.

The research was in the form of in depth interviews, in the majority of cases face to face. These lasted approximately an hour.

The topics of discussion in the interviews covered,

- The role of the interviewee
- The main elements of the business travel policy
- How it has changed in recent years
- How it is expected to change in the future
- What the drivers or motivations for change are
- What the barriers to change have been
- How the barriers have been overcome
- How virtual meeting technologies have been used to substitute a physical meeting
- How this use is seen to develop in the future
- What types of meetings are better done face-to-face
- What types of meetings are done through video conference
- What impact has a change in business travel policy had on the commute
- Has any work been done to manage the commute
- If so, what were the motivations to start managing the commute
- Are there opportunities to link the management of business travel and the commute
- Is there an opportunity to use electric vehicles either in the fleet or for taxis and hire cars
- What support or guidance would be useful from TfL
In most cases the interviews, with the permission of the interviewees, were recorded. From these interviews a series of diagrams to illustrate the links between the main points were drawn up. The main diagrams are included below.
Figure 14: The main business drivers to develop sustainable business travel policies
Most travel to clients. Security of data eg HMRC & MOD. Unable to work on trains or at home, limited to customer site and travelling by car.

Lack of telepresence at client sites. Security of data eg HMRC & MOD. Poor compatibility between systems.

Lack of publicly available VC. Resistance of older workforce to change and technology.

Poor compatibility between systems. Lack of booking controls. Need for continual motivation.

Management training. Loss of perks industrial relations issues. Preference to meet face 2 face.

Habit. Need for continual motivation. Preference to meet face 2 face.


Big office. Team sat around you. Need for continual motivation.

Paying for consultant t/4 want to see them. Face time.

Project culture to travel. Project bringing in money, so why not travel.

Based at client site. Size of travel budget on longstanding projects.

Convenience of air. Car can be cheapest option.

Time taken to travel by train. Cost of train travel.

Recessions. Reducing flexible working due to fears of job security.

Revert to meeting customers face 2 face to try maintain business.

Only works with limited numbers of people. Restrictions on floor space.

Telepresence as a place, reducing flexibility. Need to get systems and technology.

Bad experience can put people off. Bad experience can put people off.

Customers. Participants.

Individual behaviour. Humans as social and mobile animals.

Pleasure of travel. Preference to meet face 2 face.

Status symbols / perks. Business class travel.

Taxis. Company car.

Big office. Team sat around you.

Figure 15: The main barriers to embedding a sustainable business travel.
Figure 16: The main elements of business travel policy

- Ground transport largely unmanaged
  - Booking system for taxis used to gather data
  - Encourage use of ‘green’ taxi companies
  - Encourage use of pool cars

- Encourage use of rail travel, especially journeys that are less than 3 hours
  - Offer 1st class travel on trains but not planes (but some also reduce costs by cutting class on trains)
  - Make harder to book, but some refuse to do this
  - Reduce class of air travel, cuts costs and encourages rail travel

- Concentration on reducing air travel
  - Encourage use of video conferencing / technology

- Travel hierarchy
  - Outlook diary, Live meeting or teleconference
  - TMC booking systems
  - Challenge frequent fliers
  - Managers challenge need to travel and costs
  - Need clear and accurate travel data
  - Resource talent locally
  - Small proportion of staff make most journeys

- Processes
  - Conference instead of travel, carshare, Trainline

- Need to manage internal meetings to prevent that budget rising

- Change management
  - Reimburse reasonable travel expenses
  - Measure, minimise, offset

- Policy
  - Authorisation process
  - Storytelling
  - Policy, information, training
  - Resource talent locally

- Introduce maximum spend for hotels

- Encourage use of pool cars

- Encourage use of ‘green’ taxi companies

- Outlook diary, Live meeting or teleconference

- Concentration on reducing air travel

- Encourage use of video conferencing / technology

- TMC booking systems

- Challenge frequent fliers

- Need clear and accurate travel data

- Resource talent locally

- Small proportion of staff make most journeys
Communication

**Behaviour change**
- Vouchers and prizes for reducing travel or increasing use of VC
- Will not give incentives for what staff should be doing already
- Departmental rivalry and peer pressure can be linked to incentives
- Carbon accounts and targets
  - Personal carbon accounts
  - Can be based at client sites
  - Can become isolated from messages and policies
- Follow up transgressions from policy with team leaders
- Re-iterate travel policy

**Incentives**
- Pieces of Rainforest awarded for reducing travel/ emissions
- Philanthropic incentives
- Will not give incentives for what staff should be doing already

**Messaging**
- Vouchers and prizes for reducing travel or increasing use of VC
- Will not give incentives for what staff should be doing already
- Departmental rivalry and peer pressure can be linked to incentives
- Carbon accounts and targets
  - Personal carbon accounts
  - Can be based at client sites
  - Can become isolated from messages and policies
- Follow up transgressions from policy with team leaders
- Re-iterate travel policy

**Cost and sustainability put side by side**
- Outlook meeting booking
- Travel portals

**Briefings**
- Cost and sustainability put side by side
- Travel portals

**Bulletins**
- Carbon calculator ready reckoner
- Newsletters

**Environmental and office champions**
- Messages can be lost due to too much information - particularly an issue with digital communication

**Messages can be lost due to too much information - particularly an issue with digital communication**

**Need to make the messages distinctive**

**Figure 17: The main communication issues**
Some organisations seeing more home working as a result of less business travel. 20% increased productivity from home working. Needed to make VC work. Better meeting management spreading to other types of meetings. Issues of security working on train encourages car travel. Flying business class allowed for flights over 5 hours to ensure staff are fit to work on arrival. Arranging deliveries to site rather than depot. Identify local suppliers. Bike quickest and most cost effective way to get around. Resource staff locally. Get the job done right first time to prevent additional journeys. Improved meeting management. Arranging meetings either VC or internal on office days. Practicality of not travelling to meetings.

Cost
Time
Environment

Figure 18: The main areas of productivity improvement

Reduced stress
Time out of the office
Time away from home
Savings

Figure 18: The main areas of productivity improvement