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Transport's Future - the Glass is Half Full

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INTRODUCTION

The future is not predetermined and waiting to happen (though there are philosophical arguments to the contrary). It is ours to shape. If we can exercise control over or influence the future of transport then what shape would we wish it to take? There are many possibilities. We may seek a world in which zero emission vehicles with intelligent autonomous control allow pollution-free travel for everyone and unrestricted mobility. Perhaps the goal is the eradication of individualised private transport and the widespread introduction of collective transport and centrally operated demand responsive transport. Alternatively the wish might be for a society in which the trend in travel of further and faster is reversed with a return to more localised existences and reduced levels of motorised mobility. One could suggest that the future shape of transport is embodied in the numerous objectives and goals set out in the Transport White Paper and the Government's ten year spending plan. However, these provide only a framework which must then be interpreted and translated from intent into action and implementation. Action and implementation, alongside technological and social change and market forces will govern the future of transport.

Once upon a time there appeared to be a mentality of 'transport is here to serve'. As architects and custodians of the transport system, ours was not to reason why but to meet the demands society placed upon us. If more motorised mobility was its desire then success was marked and judged by the ability to deliver adequate system capacity. However, in more recent times the illusion of such a comparatively simple regime has been shattered. As society's levels of mobility have intensified and as a growing array of problems has become apparent, we have been forced into recognising that transport does not merely serve society, it shapes society, as in turn society shapes transport. We talk now of integration and the Government itself recognises the need for an integrated approach to transport to extend beyond integration within transport and between transport systems and services. It must also include the integration of transport with the environment, land-use planning and policies for education, health and wealth creation.

Once transport is put in its place, i.e. seen not as a closed system but as something embedded within and intrinsically linked to the fabric of society, then determining what constitutes success or at least good progress for the transport sector becomes all the more complex. Views are likely to be varied concerning the desired or expected nature of future society. Some will argue that it is not the business of the transport sector to grapple with future society; others will stress the part transport must play in social engineering. Hence, not only do we not know what course the future will take but we are not, necessarily, clear what we want the future to be. As a consequence it can be all too easy to argue in opposite directions as to whether the glass that is the future of transport is half empty or half full.

This Chapter attempts to make some sense of this confusion by setting out passenger transport's strengths, weaknesses, opportunities and threats. In turn, and acknowledging that we have the power to shape transport developments, the case is made for how we might ensure that transport's glass is half full.

SWOT ANALYSIS

A SWOT analysis can help to focus on strengths, minimise weaknesses and take greatest possible advantage of opportunities available. Exploring *strengths* concerns identifying advantages and what is done well. Exploring *weaknesses* involves considering what is done badly, what could be improved and what could be avoided. Typically the aim is to assess strengths and weakness not only from an internal perspective but from an external one. *Opportunities* concern potential openings and interesting trends or changes such as those in technology, government policy and social patterns and lifestyle changes. *Threats* represent the obstacles or barriers being faced.

The Table below provides an overview of transport's strengths, weaknesses, opportunities and threats. It is undoubtedly not exhaustive in its coverage but is intended to identify many of the key factors that are playing, or will in future play, a part in the shaping of transport. The analysis is oriented towards passenger transport rather than freight though many of the factors may be common to both. The following sections explore the contents of the Table in more detail.

Strengths	Weaknesses
1. Keeping people moving	1. Looking only one step ahead
2. Environmental awareness	2. Reliance on modelling and what is measurable
3. A widened transport agenda	3. Focus on economics driven appraisal
4. Creative and bold local authorities	4. Transport shaped by technically minded men
5. Learning from other countries	5. Focus on mobility not accessibility
6. Urban regeneration	6. Ignorance of social and technological change
7. Use of new technologies	7. Ineffective integration of transport with society
8. Forums for constructive criticism	8. Lack of political resolve and consistency
9. An active research community	9. Funding regimes
10. Strong investment	10. Masterly inaction

Opportunities	Threats
1. Information and communications technologies	1. Legacy infrastructure and systems
2. Faith in a gain with pain culture	2. Centralisation and economies of scale
3. An informed and sympathetic public	3. Globalisation
4. Experimentation	4. Hypermobility and market forces
5. Harmonising transport and social policy	5. Complexity of the problems
6. Land use and transport interaction	6. Inertia, habit and fear of change
7. Hypothecation	7. Political pressures and institutional barriers
8. Mainstreaming	8. Short termism
9. The transport planning profession	9. Skills shortage
10. System dynamics	10. The media

STRENGTHS

As a profession we have perfected the art of critically appraising transport's problems and identifying problems with current policies and practices. We have tended to be less vocal or less inclined to reflect upon the positives. Yet the transport sector does possess a number of strengths, many of them unsung or undervalued.

Keeping People Moving

Perhaps first and foremost, the profession is good at delivery against the policies and plans of the day. The media regularly remind us of worsening congestion and disruption to the transport system. Far less often, if at all, are we reminded of how good our transport system is. In the last fifty years it has had to cope with a huge increase in travel and traffic levels (as measured in passenger kilometres). Personal domestic travel has gone up by 334 per cent between 1952 and 1999 with cars vans and taxis now accounting for some 85 per cent of passenger kilometres travelled (DETR, 2001). Over the period 1991-2001 (from pre to post privatisation) passenger kilometres travelled by rail increased by 21 per cent (DfT, 2002). While coping with increasingly high levels of demand, the safety record of our transport system overall is one of the best in Europe. Regrettably the effectiveness of traffic management is nearly always overshadowed by the pressures placed on the system. It might be helpful to periodically switch off urban traffic control systems to impress upon the public what life would be like without them.

Environmental Awareness

In recent years developments of our transport system have taken much greater account of the environmental impacts and sought to minimise these. Under today's assessment procedures the Birmingham Box would not have come into existence unless it could have been built underground. Mitigation of adverse impacts has become acceptable even when this comes at a high financial price – planned improvements to the A303 running down to the West Country include a 2.1km twin bore road tunnel beneath Stonehenge in order to prevent the transport infrastructure and its use causing visual, noise and emissions pollution. In other words, while there remains considerable room for improvement, we are now much more sensitive regarding how our transport system fits in with the natural and built environment.

A Widened Transport Agenda

In spite of criticisms levelled at current transport policy we are in the fortunate position of having a broadened and arguably more considered and appropriate transport agenda. The 1998 Transport White Paper (DETR, 1998a), the Road Traffic Reduction Act (DETR, 1998b), the 10 Year Plan (DETR, 2000a) and the Transport Act 2000 (DETR, 2000b) together provide an important new framework. Although some consider we are now seeing slippage, the Government's position has been to see road building as a point of last resort rather than the preferred choice in tackling congestion. Promotion of public transport has become much more prominent. Provision for traffic restraint has now been made within primary legislation giving local authorities powers to introduce congestion charging or workplace parking charges. Demand management is recognised as an important component of any

integrated approach and travel plans are now increasingly commonplace amongst schools, businesses and public authorities.

Creative and Bold Local Authorities

Central Government has been keen to devolve responsibility for addressing transport's problems down to a more local level, arguing that local problems are best addressed by local solutions. We can cynically argue that this allows Central Government to distance itself from fallout from ineffective or unpopular solutions. However, it does present local authorities with more opportunity. Therefore a key strength must surely be that we have a number of progressive local authorities that are prepared to be bold and creative in tackling the problems they face.

The most poignant example of the day is the introduction of road user charging in London. This also illustrates the strength we have and the importance we should place in key individuals within transport who are prepared to make a stand and be controversial where they believe something to be the right way to proceed. In less prominent ways many local authorities are pressing forward with their measures and solutions – we are, for example, seeing increasing pedestrianisation in our urban centres and a growing number of park and ride facilities on the urban fringes (both of these measures have met with scepticism and objection and yet have yielded positive outcomes).

Learning From Other Countries

To many, involvement in European projects is associated with bureaucracy and administrative and managerial nightmares. However, European programmes represent a useful means of cross-fertilisation and mutual gain. Different countries have different cultures, policies, practices, urban forms and social values. In turn, while many core elements of their transport systems may be common, they have differences and different approaches to the problems they face. The UK has been substantially involved in European transport programmes and this continues to facilitate the introduction of good practice found in continental Europe into the UK.

Urban Regeneration

We are currently enjoying a welcome period of progress in terms of urban regeneration. Docklands redevelopments in a number of cities provide an excellent illustration of how the vibrancy and attractiveness of urban areas can be restored. There is also a welcome redistribution in the balance between 'movement space' and 'exchange space' with, for example, increasing pedestrianisation, footpath widening and home zone development. We are beginning to (re)create urban environments in which people want to *be*, rather than to only be passing through. As the public increasingly recognises the transformation of urban environments that can be achieved they are likely to be more receptive to further reallocation of road space and reduced access by car.

Use of New Technologies

The transport sector has, for some time, been making good use of new technologies. As advances in mainstream information technology have taken place the transport

industry has looked to identify bespoke applications of the technology to meet its own needs. Technology and particularly telecommunications now plays a major part in traffic management systems and operation of transport services. As the data gathering infrastructure has increased and as the Internet has emerged as a powerful new medium for (two-way) information exchange, so the use of technology has extended from system management to informing the traveller. For public transport alone there are over 400 websites in the UK now providing traveller information. This strength is being further developed as part of the Ten Year Plan with the Government's Transport Direct Programme which aims to provide a one-stop-shop multi-modal travel information service for planning booking and paying for journeys and for receiving real-time update information. This area represents as much an opportunity as a strength with the future prospect of travellers making more fully informed choices. Informed choices can result in greater use of alternatives to the car.

Forums for Constructive Criticism

Government itself consults before formalising its policy position in a White Paper. However, it is important to maintain a critical watch over the effectiveness of the policy and its implementation. Further still it is important that such a watch incorporates the views of a full range of stakeholders to ensure any critique is well informed and comprehensive. We are well placed in the UK to address this. The Government itself established the Commission for Integrated Transport to monitor and express views on its policy implementation. The House of Commons Transport Select Committee is also proving a useful vehicle for addressing and appraising key areas of transport development. By adopting a topic-based approach it hears evidence from a wide range of stakeholders including Government itself and produces publicly available reports documenting its findings and thereby raising the profile of key issues for further consideration by a wider professional audience. Further still we have a number of professional institutions, societies and special interest groups through which expert views can be channelled and promoted.

An Active Research Community

A further asset to the transport sector is the well-developed state of the research community, now spread across a number of universities and some consultancies. Research grouping are evolving in response to the changing transport agenda and are increasingly multidisciplinary in their composition. Collectively the community has substantial experience of what works and what does not in transport (as of course do many practitioners) and can provide an important source of evaluation and critique.

Strong Investment

Funding streams for transport are perhaps more of an opportunity than a strength but the levels of investment in transport in the wake of the Ten Year Plan are certainly an important boost and provide a stronger platform of resource in order to develop more effective strategies and, importantly, to be able to move from strategy to delivery.

WEAKNESSES

When the transport problems we face appear so substantial, it is perhaps easier to reflect on weaknesses than strengths as we try to assess how we arrived at this state of affairs and how we might remedy the situation.

Looking Only One Step Ahead

The benefit of hindsight exposes a major weakness in our planning and strategies. We often fail to look more than one step ahead. The first order consequences of a strategy are always considered - consequences we intend to result from our actions. Often these will be short-term, measurable and tangible. Less common is the consideration of second and third order consequences. These may be much more difficult to foresee or anticipate, may be longer term and yet may be as profound, if not more profound than the first order consequences. A familiar example of this is predict and provide. Predicting how much demand for travel there will be and then providing sufficient system capacity to accommodate it appears to address the immediate problem. However, we now know that building new roads generates some additional traffic (SACTRA, 1994) and, rather than addressing the problem, actually perpetuates it.

However, are we learning from our mistakes in this regard? Arguably not. We are improving our multimodal transport system with an expressed aim of attaining reduced and more reliable journey times - laudable first order consequences. Yet Government statistics themselves confirm a consistent trend of people travelling further and faster – in 1972/73 the average person travelled for a total of 353 hours annually, covering 4476 miles; in 1998/2000 this had become 360 hours and 6843 miles (DTLR, 2001a). In other words, it seems reasonable to suggest that the second order effects of reduced journey times will be that more passenger kilometres are travelled thereby placing more strain on our transport system. The third order effects could be that, spatially, our patterns of activity become more dispersed, increasing our dependency on mobility to sustain our lifestyles.

Reliance on Modelling and What is Measurable

Transport planning is concerned with advising decision makers about the likely consequences of alternative courses of action. In this regard a culture has evolved of focusing on quantitative analysis which in turn leads to a mentality of ‘if you can’t count it, it doesn’t count’. Institutionally, we have come to rely on modelling as the basis for advising decision makers. Indeed one could argue that modelling is the only official channel through which analysts can convey their views with any authority. Models have substance. They are complex and data hungry. They produce detailed numerical outputs and indeed in many instances can offer compelling graphical representations of future scenarios. The expense, complexity and length of the process involved with modelling appears to act as a proxy for the level of confidence given to the outputs.

However, models by their nature incorporate assumptions and tend to be geared towards representing first order effects. We are at risk of compromising our options for the future development of our transport systems if modelling in its present form continues to play such a significant part in informing decision making. This is not to undermine the role of modelling but we would do well to better acknowledge the

limitations and perhaps make more use of other techniques for projecting into the future such as scenario planning, visioning and backcasting and Delphi studies (drawing on experts' opinions).

Focus on Economics Driven Appraisal

Modelling outputs relating to vehicle and passenger flows and delays feed into the economic appraisal process. While we now have a 'New Approach to Appraisal' in the UK (DETR, 1998c) which extends beyond only economic considerations, the benefit to cost ratio from the economic assessment still holds significant sway in the overall assessment of transport schemes. Environmental impact assessment has risen in prominence but community impact assessment typically remains a marginalized consideration. The fundamental approach to economic appraisal has changed very little since its introduction in the 1960s (DETR, 1999). In particular, travel time, savings in which typically constitute the major economic benefit of a transport scheme (DETR, 1999), is treated in a very clinical and simplistic way. It is assumed, for example, that time spent travelling during the working day is unproductive wasted time (DETR, 2000c). This ignores what occurs increasingly in practice, particularly with regard to business travel by rail – people use their travel time productively, often facilitated by the availability of mobile technologies. Hence, not only could it be argued that appraisal has historically over emphasised the importance of economic assessment but also that such assessment is misguided. Suppose travel time is 50 per cent productive (i.e. an equivalent of half the time is used as activity time). This would mean that the value of any travel time saving from a proposed transport scheme would be halved. If this were to be the case, how many existing schemes would have seen their benefit to cost ratio drop from above 1 to below 1?

Transport Shaped by Technically Minded Men

Perhaps some of these weaknesses are derived from a further weakness. The shaping and development of our transport system has been traditionally the preserve of technically minded men. This is quite understandable. For centuries transport has been a matter of engineering – the design, construction and maintenance of infrastructure and vehicles. Managing our transport systems has also been an increasingly important consideration, calling upon a grasp of technological advancements. Only recently are we beginning to give serious consideration to managing the demand for travel – something which calls for an understanding of the links between transport and society – an understanding not best suited to being addressing (only) by technically minded men. We have, for too long, treated the development of our transport system in a functional way – seeing it simply as a means of getting people and goods from A to B. We have not questioned whether people should be going from A to B or indeed taken much note of whether the functional specification meets the needs of society in an inclusive way.

Consider for example that 52 per cent of the UK population is female (ONS, 2001, Chart 1.4). Not all females (or even many females) fit the stereotype of the commuter travelling from home to work and back again in the peak periods, laden only with a briefcase. Yet the majority of transport professionals, those shaping our transport system, do fit the stereotype.

Focus on Mobility and Not Accessibility

Following on from this criticism of functional thinking, is our preoccupation with mobility rather than accessibility. The World Bank defines transport as 'connecting people and resources to opportunities'. In the UK we have taken 'connecting' to mean 'moving' people to opportunities. We should instead recognise that our transport system has or should have, as its goal, providing individuals in society with access to goods, people, opportunities and services. This can be achieved by bringing opportunities closer to people – a matter of land use planning or indeed virtual mobility (something returned to later).

Instead our approach of moving people to opportunities has created unwelcome second order effects. As we have supported greater mobility to gain access so the points of access themselves have moved seemingly further away. For example the village shop is forsaken for the supermarket several miles away – accessible only by car. Loss of trade from the car owning majority of the local community leads to closure of the village shop. This both reinforces the need for motorised mobility for access but also denies access to those who do not have or cannot afford motorised mobility as an option. Further still we are prone, when we do consider accessibility, to do so in terms only of access to the transport system (functional thinking once again). Improved access is gauged by the availability of a bus stop within 100 metres of one's home to which a low floor bus comes at least every hour. This does not equate, necessarily, to improved access to goods, people, opportunities and services.

Ignorance of Social and Technological Change

A weakness explicitly acknowledged yet poorly addressed at the highest level is our ignorance of social and technological change. In its Ten Year Plan (DETR, 2000) the Government states that "*social and technological changes will also alter patterns of behaviour in unforeseen ways*" and "*the likely effects of increasing Internet use on transport and work patterns are still uncertain, but potentially profound, and will need to be monitored closely*". It seems that to do more than acknowledge the significance of changes to society is to attempt to confront a problem that is too complex and that it is better therefore to press on with a degree of ignorance.

Ineffective Integration of Transport with Society

A further weakness is by now implicit from those already considered – we have not been particularly effective at integrating transport with society. Indeed only relatively recently have we patted ourselves on the back for acknowledging and taking some action concerning the links between land use and transport.

Lack of Political Resolve and Consistency

To be able to address many of these weaknesses is in part dependent upon the support of the political process. Transport has been referred to as the poisoned chalice of politics – evidenced perhaps by the rate of turnover of transport ministers and indeed the successive redefining of its existence within Government Departments – from DoT to DETR to DTLR to DfT in less than 10 years. Transport users are voters and an overarching concern of a political administration is to be re-elected. Political cycles are short. Discernible positive progress in transport can take longer to achieve.

As a consequence it would take a very bold government in a democracy to maintain strong resolve and to steer a steady course in dealing with the transport problems we face. This is particularly true if the course to be taken is one that involves restraint – compromising people's choice and freedom of mobility or challenging their assumed right to travel by car. Instead compromise and shifts in emphasis by governments tend to prevail. It can be argued that governments are pressed into *following* the democratic will of the people rather than *leading*. This runs the risk of rendering the initial goals and objectives unattainable.

Funding Regimes

Problems of political resolve are compounded by unwelcome constraints in current funding regimes. Although overall funding for transport has been increased, local authorities are united in their frustration over the imbalance and inflexibility concerning capital and revenue funding. This approach tends to favour pursuit of large capital schemes rather than a whole series of smaller schemes and measures that can work in an integrated way to address local transport problems. The latter may be a more effective way to proceed.

Masterly Inaction

We tend to be particularly cautious in the UK when it comes to change. It can be many years or even decades between the time a transport scheme is proposed or conceived and the time it is implemented. We have countless checks and balances to consider involving desk studies, appraisal and public inquiries and sometimes more than one iteration of these. Our fear of making mistakes has overshadowed opportunities for trial and error and the prospect of accelerating positive change.

OPPORTUNITIES

Information and Communications Technologies

Some of the most significant opportunities for transport must relate to the information age. We are seeing tremendous advances in information and communications technologies (ICTs), with their capabilities, versatility and levels of uptake increasing as their prices decrease and their level of uptake increasing. ICTs already play their part in traffic management but they now offer considerable potential to play their part in travel demand management. Developments such as smart cards allow less blunt pricing mechanisms to be used in transport. Ticketing systems can be made more attractive to prospective users of public transport. Charging mechanisms can be introduced based on use of the transport network at given times and places. Information exchange is proving an important opportunity for the provision of traveller information – something which seeks to enable individuals to make more informed travel choices.

Once one recognises that many activities we participate in are largely or entirely comprised of information exchange then the potential of virtual mobility becomes apparent (Kenyon et al, 2002). The Internet provides increasingly the opportunity to participate in activities remote from the home or office without the need for travel on the part of the individual(s) concerned. We are experiencing a marked increase in the

number of people who sometimes work from home and the number of people who do their shopping online (Lyons, 2002). This is not to suggest that we should expect virtual mobility to provide wholesale replacement of physical mobility. Rather, for some people for some activities some of the time it will prove an acceptable substitute. As such it should be explicitly recognised and accounted for in an integrated transport policy.

Faith in a Gain With Pain Culture

In congestion charging for London, Ken Livingstone is effectively subscribing to a philosophy of there being no gain without pain. Hitherto, pain has often been the barrier to the implementation of transport measures that will ultimately provide real gain. We have not tended to be good at identifying the gain or selling it to the public. By contrast it is all too easy to focus upon the pain (something that the media do very well) and back away from the preferred measure. Yet experience from the September 2000 fuel crisis suggests that congestion charging will be a success – people are far more flexible and versatile than their objections to new transport measures would often lead us to believe. Research during the fuel crisis (Chatterjee and Lyons, 2002) found that a third of commuters used public transport, cycled, walked or car shared instead of driving. A quarter of parents walked or cycled their children to school instead of driving and one in seven car users shopped more locally than usual for groceries, going either by car, walking or cycling.

The fuel crisis was an extreme impetus to make more considered used of motorised vehicles and of course it was short lived. Nevertheless it seems that only a collective kick up the backside will force us as individuals to change our expectations from and our behaviour in using the transport system. We wont like being kicked but it will do us good. If the London scheme goes well (and early indications suggest this to be the case) then there is a real opportunity to built confidence both among politicians and the public in gain with (some) pain being the way forward for transport.

An Informed and Sympathetic Public

The opportunity above is reinforced by another trend that appears to exist. For some time there has been a public belief that car use is a necessity of modern living and that as such our politicians owe it to us to keep the traffic moving. More recently it seems that the public have a greater awareness of or have become better informed concerning the nature and severity of the transport problems we face. They are now less inclined to expect that they can simultaneously have unfettered personal mobility and uncongested roads. There is a greater likelihood that they realise that compromise will be necessary to move forward. As such it can be argued that the public is now more sympathetic to transport measures that restrain car use. This view may be too optimistic but it is certainly a trend that should be nurtured and encouraged and in turn exploited.

Experimentation

There are those who caution against dealing with the increasing complexity of the transport problems by developing increasingly complex models. They argue that it is necessary to rely more upon trial and error. The road user charging scheme in London might be referred to as an experiment or large scale trial. If it is successful then it

becomes easier to make the case for introducing road user charging in other cities. If the trial proves to have significant errors then it should not be judged simply as a failure. It presents us with an important opportunity to learn from the experiment and consider refinement to our methodology before perhaps trying the experiment again. Devolved decision making offers the prospect of a greater incidence of experimentation. Successes will accelerate the uptake of measures in other areas; failures will inform and redirect future measures. This is not to suggest that trial and error should be undertaken in a haphazard way and clearly the success and longevity of such a culture depends on the benefits of the successes outweighing the disbenefits and damage to credibility of the failures. At a time when there is a willingness by Government to consider innovative approaches to transport, experimentation is an opportunity not to be missed.

Harmonising Transport and Social Policy

Whether or not transport planners should play an active part in social engineering remains a point of debate. However, with a growing recognition of the inherent links between society, lifestyles and patterns of personal travel the timing seems ripe to pursue greater harmonisation between transport and social policy. This is already a stated aim of transport policy. However, translation of the aim into actions has yet to be fully addressed. Some other European countries have much clearer social welfare values which underpin policy areas such as transport. As such, the provision of public transport is seen as an essential public service alongside education, health etc. – something that should be accessible to all. In the UK we have drifted somewhat from such a position with a Conservative administration which promoted individualism and a public transport industry that has been subject to deregulation and privatisation. We now have an opportunity to more vigorously pursue such harmonisation and this should yield not only social benefits by developing a more inclusive transport system, but potential benefits to the transport system itself in terms of how it is used. The reorientation of social values held by politicians and the public could also change positively their receptiveness to a reshaping of the transport system.

Land Use and Transport Interaction

It is a welcome development that the links between land use and transport are now more strongly recognised and the opportunity to extend this further is important. Land use dictates the spatial distribution of people and opportunities and significantly influences the resultant patterns and levels of travel. Through an approach to land use planning that takes greater account of the implications for transport, it is possible to give greater emphasis to the importance of accessibility rather than mobility. There is the prospect of being able to move opportunities closer to people. Hitherto we have allowed mobility to diminish the importance of proximity of activity centres in people's daily lives. Homes are not located near to workplaces and schools and shopping facilities are also often elsewhere. In this context high levels of mobility become necessary and sustained.

Concerns are now (once again) being raised over the links between land use and transport in the context of land value taxation (Harrison, 1992). At present public investment is used to expand or improve the transport system. As a consequence the value of land adjacent to the system is increased. However, such gains in value are benefits reaped by landowners and developers rather than the public purse. There is

also a high incidence of unused properties or pieces of land in urban areas. Such land remains unused because as an investment it makes more money over time in this state than it would if it were developed. This is suppressing urban regeneration and leading to unnecessary development in the urban fringe and beyond. The introduction of land value taxation could both release significant quantities of land for use and provide a substantial resourcing stream for the development and maintenance of our transport systems.

Hypothecation

Hypothecation of a more direct nature represents a means of improving transport services and simultaneously introducing traffic restraint. Under new legislation a local authority can reinvest revenues from road user charging in transport for a period of ten years (DETR, 2000b). In theory this represents an effective formula and a win-win situation - traffic levels are kerbed while travel alternatives to car use are improved. Perversely perhaps, concerns can arise when evaluating the potential introduction of road user charging that if the stick is too effective it will not generate enough revenue to fund the carrots. Again in this context there is a temptation to look (predominantly) to modelling to guide decisions and assess costs and benefits. It must be asked what alternatives are proposed if we are to turn our backs on such an opportunity. The temptation is to begin offering the carrots with an intent to eventually introduce the sticks but with the option of abandoning the sticks if politics dictate. Yet without the sticks the carrots become both less attractive to the public and less economically viable. Hence the opportunity of hypothecation is surely one to be seized, following in the footsteps of London.

Mainstreaming

In recent years there has been a change of attitude towards equality. Whereas once the notion of equal opportunities was seen as incidental there is now a growing recognition of the need for government at all levels to build equality into its policies and programmes. "*'Mainstreaming' equality is essentially concerned with the integration of equal opportunities principles, strategies and practices into the every day work of Government and other public bodies from the outset, involving 'every day' policy actors in addition to equality specialists. In other words, it entails rethinking mainstream provision to accommodate gender, race, disability and other dimensions of discrimination and disadvantage, including class, sexuality and religion*" (EOC, 2003). Mainstreaming is about framing policies according to the realities of people's daily lives and needs. In the broadest sense for transport it represents taking greater account of society itself in the development of our transport systems. The aim of mainstreaming in part is to help create a more inclusive society. Mainstreaming when applied to transport can also deliver a transport system that better meets the needs of its users.

Let us return to an example raised earlier and consider the extent to which our transport system currently caters for the needs of women. Women comprise over 52 per cent of the population, yet traditionally much transport policy has been framed around the perceived needs of the male population, particularly the breadwinner whose journey patterns have been characterised by a simple 'journey to work' and back, with an emphasis upon meeting the needs of car drivers until relatively recently. In contrast less women than men have daytime access to a car (or are drivers/licence

holders - though rising) and although the majority of women work outside the home nowadays they also still incorporate in their journey plans a range of other duties and escort journeys. Trip chains such as home to childminder to school to work to shops to school to childminder and back to home are not uncommon. Mainstreaming is a positive development for transport to embrace and to capitalise upon.

The Transport Planning Profession

Mainstreaming gender requires champions on the inside of the policy and planning process. In short, achieving mainstreaming will require more women to enter into the transport profession itself. Encouragingly this appears to be happening. For example a substantial proportion (if not the majority) of the travel plan coordinator posts funded by Government are held by women. In general the mix in the transport profession, and in particular the transport planning profession is changing. People from a range of non-engineering backgrounds such as geography and social sciences are becoming involved. The transport planning profession itself is also becoming more identifiable and its profile is being raised, notably through the expanding activities of the Transport Planning Society. This pattern of development is allowing contemporary issues to be challenged and new perspectives to be introduced. With a multidisciplinary and focused transport planning profession at its disposal, transport strategy and implementation has a real opportunity to make progress.

System Dynamics

Perhaps something that sets a context for all other opportunities is the dynamic nature of transport and society. People overall are continually changing where they live and work; they are also moving through different life stages. The information age is advancing and bringing change of its own. This is important because it means that if changes are introduced to the transport system and its operation and use, society should be able to naturally adapt. With any change there will be losers as well as winners but over time these dynamics mean that people should be able to adjust their lifestyles and patterns of activity according to the new set of constraints that they face.

THREATS

With the opportunities outlined above what then might be the obstacles or barriers to making progress?

Legacy Infrastructure and Systems

Perhaps one of the most substantial difficulties is our legacy infrastructure and systems. We have for example a rail network that is now recognised by the Government as being in far worse condition than thought in 2000 when the Ten Year Plan was published. The problem faced by rail services is not that of generating passenger demand but one of providing sufficient capacity to meet that demand and in a way that offers an acceptable level of service. Yet increasing, capacity is hampered by the historic nature of our railways. Compared to continental Europe we have narrower gauge track which limits the speed and size of rolling stock. Double-deck trains that are used on the continent are not an option in the UK without new lines or hugely expensive modernisation to overcome problem of low level railway bridges.

Stations too would need further modernisation. Even if resources were to be available to overhaul the entire system, disruption would be substantial and long term and land use constraints would be significant. Perhaps legacy systems should not be termed a threat but they are certainly a serious constraint.

Centralisation and Economies of Scale

Centralisation is a phenomenon that has been permitted to occur in part because of an assumption of access to car use. Economies of scale dictate that it is generally more effective for a business to consolidate its activities at a single location, rather than maintaining a series of spatially dispersed operations. Thereby we have seen local shops give way to supermarkets and local hospitals and schools close with their 'customers' obliged to travel further to larger scale sites that are financially viable. Planning policy guidance (DTLR, 2001b) can limit the extent to which (further) centralisation occurs at out-of-town locations which in theory retains a degree of access via public transport for those without access to a car. However, concerns remain that destinations are moving further away from people either denying them access or necessitating car use.

Globalisation

Beyond centralisation we have globalisation. Doubtless there are many benefits of globalisation to be enjoyed. However, in transport terms it represents a growing trend in people wishing to access goods, people, opportunities and services across national boundaries and in turn wishing to travel over greater distances. Beyond a certain distance air travel becomes the only viable option (unless virtual mobility is employed). In this regard transport retains its 'here to serve' mentality. Projections of growth in air travel are made and policymakers appear to concern themselves principally with how to meet new levels of demand. Have we learnt nothing from the road building days of predict and provide? Not only does air travel fail to cover the total costs it imposes (something implicitly supported by the absence of taxation on aviation fuel) but it also generates significant problems in relation to surface transport access.

Hypermobility and Market Forces

Air travel represents the means to sustain the longstanding trend of society travelling faster and further. Hypermobility (Adams, 2000) is a term which has been used to reflect the direction in which such a trend is inexorably leading us. The importance of spatial location is increasingly diminished in a world of highly mobile existence. Traditional communities are eroded to be replaced by distributed ones, sustained through telecommunications. Those who can afford this existence are seemingly swept forward by market forces. Those who cannot face an increasingly isolated existence. Therefore it can seem somewhat absurd that a key means for transport to play its part in confronting social exclusion is seen to be the provision of better access to public transport. In other words, rather than trying to influence market forces in such a way as to move back from a state of hypermobility, we are decreeing that we should help push those who are excluded further into a hypermobile existence.

Complexity of the Problems

Perhaps an ever-present threat is the shear complexity of the transport problems we face. Once the problem was limited to how to provide enough total capacity to meet total demand. Now we are faced with needing to manage demand itself. To do this effectively we need to be able to understand what gives rise to demand. In order to address this a whole series of cause-effect relationships must be accounted for, and cause-effect relationships that extend far beyond transport itself and into the very fabric of society. Understanding generally requires empirical evidence to be substantiated and verified. However, as the complexity of the issues to be understood increases, the prospect of acquiring adequate or any empirical evidence rapidly diminishes. As the headache intensifies the simplest remedy can be to turn away from seeking a thorough and fully-informed understanding and to revert to more simplistic and arguably inadequate or even misguided interpretations of reality.

Inertia, Habit and Fear of Change

Allied to the complexity of transport's links with society is the tremendous inertia that exists in the system. Society is made up predominantly of individuals who are creatures of habit. We are uncomfortable with the prospect of change and this trait permeates into transport policy and practice. We may proffer our *intent* to change through conducting debate and analysis surrounding new ways forward but when it comes to the *implementation* of change, instincts are prone to take over and inertia and habit hold sway.

Political Pressures and Institutional Barriers

Much as legacies in our transport system itself can inhibit progress, there are longstanding legacies in the administrative and procedural processes that underpin policymaking and implementation. Monolithic bureaucratic systems preside and are housed in a fortified institutional framework of considerable complexity. Instigating change can therefore be likened to wading through treacle. The suggestion of land value taxation is a good example. Even if the principles of such a new taxation regime could be demonstrated it would require a multitude of government departments and committees to progress it anywhere close to being implemented and further barriers would then be raised about the shear cost and complexity of implementation itself, particularly if other taxation regimes were affected. Institutional barriers are further reinforced, or made difficult to overcome, by changing political pressures and priorities.

Short Termism

Many of the above threats or constraints are exacerbated by short-termism. The political process at national, regional and local levels is short-term. Public transport operators are operating their businesses to short-term time horizons. The public itself is often more concerned with immediate impacts on its existence (such as a surge in petrol price) than it is with long term developments. Many transport schemes and certainly those inter-related with intentional land-use changes can take many years to come to fruition and for the full benefits to be realised. There can be few politicians who would choose to see the fruits of their labours enjoyed by a future administration, particularly of an alternative political persuasion!

Skills Shortage

While the transport profession itself has been identified as an opportunity it also represents a threat. Although the mix of disciplines and gender in the profession is undergoing a positive change, there are at present serious concerns that there is a major shortfall in the number of people within the profession and in some cases the skills they possess. Without sufficient resource in this regard it becomes questionable whether the renewed levels of investment in transport can be fully and effectively used. The Transport Planning Skills Initiative is a profession-wide endeavour to begin addressing this and yet the level of resources devoted to tackling the problem may prove wholly inadequate when set against the cost to transport and society of a skills shortage persisting.

The Media

The media constitute a potentially major threat to transport strategy and implementation. They can exert significant influence over public opinion and can be inclined to offer a subjective rather than objective representation of the facts. This is compounded by a natural tendency to look for 'good stories' which tend to be found in bad news rather than in seemingly unremarkable or uninspiring progress or success. Traditionally, transport professionals were looked to for their technical expertise. To guard against this media threat and indeed to perhaps even turn the threat into an opportunity, transport professionals or at least the transport profession itself must develop a much greater capacity to understand and deal effectively with the media.

THE GLASS IS HALF FULL

What better time to be writing the concluding section of this Chapter than on the day after one of the world's most congested cities introduced its ambitious and controversial 'experiment' in traffic restraint.

On the morning of the introduction of congestion charging in central London (Monday 17 February 2003), news coverage of the charging scheme had to jostle for space with lead articles and features covering the huge anti-war protest march in London over the weekend. The Times carried the headline 'Late payers spark fears of traffic charge chaos'. The Daily Mirror headlined the issue with 'Mayhem Fear as Congestion Charge Arrives'. The following morning the corresponding headline from The Times was 'The day the lights turned green' and the Daily Mirror proclaimed 'Not a Jam in Sight as Feared Plan Begins'. Meanwhile the Sun was providing cut-out number plates for its readers showing '5OD U KEN'. Central Government has been conspicuous by its absence from commentary leading up to and immediately following the introduction of congestion charging in central London.

Reports suggest that on the first day of the London scheme (admittedly introduced during a school holiday period) traffic was 25 per cent lighter than usual, virtually all roads and junctions were free of jams and trains and buses experienced no noticeable increase in passenger numbers.

The London scheme epitomises many of the issues raised in this Chapter and might well now mark the dawn of a new era in transport – one in which the glass is *at least*

half full. It highlights the failure of central government at times to expressly support the implementation of its own policies and has flown in the face of masterly inaction. The threat of the media has been readily apparent as, in part, it has tried to provoke a reaction from the public's sense of inertia and fear of change. However, the strengths stand out - the bold and creative leadership of the Mayor and his team and their ability to keep people moving and to successfully employ new technologies as the scheme was smoothly introduced. The scheme also represents a substantial example of hypothecation – funds raised by traffic restraint to support transport improvements. If the first day of congestion charging in London marked its future prospects then we face great opportunities to foster public and political confidence in a gain with pain culture and to pursue a greater degree of experimentation and replication of success. At last an opportunity to begin rationalising car use might be within our grasp.

People are more flexible than we are perhaps prepared to believe. We resist change and compromise and have to be dragged kicking and screaming to their point of introduction. However, once they occur we are able to adapt, and in ways and to extents that, for all the detailed speculative analysis, we were not able to fully predict. The net result can be an overall improvement either to the transport system or to our living environment and social well-being or both. We must recognise this and use it to our advantage. We must also recognise that as individuals in society most of us are incapable of significantly changing or compromising our habits, particularly where such habits fit comfortably into the social norms surrounding us. In order to change we need to receive a collective kick up the backside – a kick the consequence of which is likely to be a shift in social norms and in turn in behaviour.

If our glass is to be at least half full then we must identify an overall goal and ensure that we have and maintain widespread political and public support for that goal. At the outset of its foray into transport futurology, the Transport Visions Network first identified the principles it believed should guide future transport policy and practice. It believed that through adherence to these principles "*transport should support and contribute to the functioning of an equitable, sustainable and healthy society*" (Lyons et al, 2001). A laudable aim perhaps though a more simplified and easily interpreted goal would be to achieve more rational use of the private car. This would seem a goal to which most people would subscribe. With this in our sights, policymakers and transport professionals must look to identify suitable means to achieve the goal. This must be done in a way that retains the support of the public. The next step in the process is to establish widespread agreement that the goal cannot be achieved unless traffic restraint is introduced (i.e. the 'kick up the backside'). If a culture of experimentation can also be fostered then specific 'kicks' can be introduced, tested and, when found to be effective, replicated.

Achieving all this will be greatly helped if we can continue to strengthen and enrich the mix within the transport (planning) profession, thereby accelerating the process of mainstreaming society into transport policy and practice which in turn should further encourage the public to work with change rather than against it.

If congestion charging in London had failed then pursuing all of the above would be substantially more difficult. At the time of writing it is the author's belief that it has not failed and indeed will be heralded as a significant success. This being the case then a number of other UK cities and indeed cities around the world will be poised to follow suit – we might now be seeing the beginning of a cascade effect. We are

certainly at an important point in the evolution of transport systems and the role of personal motorised mobility in society. A closing question is how bold could we become in filling the glass of transport's future?

Some radical suggestions have emerged from the Transport Visions Network to whet the appetite if we are prepared to be adventurous, ambitious and to experiment. Two examples are given to conclude this Chapter.

The first suggestion, called 'peak narrowing', is that the principle of congestion charging be reversed for our cities (Beecroft et al, 2002). Instead of charging car users who travel at the most congested times and in the most congested places, why not charge for off-peak travel? High levels of charging at off-peak times would protect such periods from the adverse effects of peak spreading, increasing the pressure on drivers to remain in the peak periods when no charges apply. Those wishing to persist using their cars at the most popular times of the day would 'pay' for the privilege by virtue of the intolerable congestion they will experience. The net effect might well be to bring about substantial rationalising of car use and greater use of virtual mobility or other modes.

The second suggestion is termed 'Sustainable Sundays' (Beecroft et al, 2002) and involves an outright ban on the use of personal motorised vehicles on Sundays. The aim is to expose the public to first hand experience of life without the car. It would encourage people to undertake activities more locally yielding regeneration of local communities and resulting in greater use of walking, cycling and public transport. People would also experience living environments that were not dominated by the car (notwithstanding their presence as parked lumps of unsightly metal). Travel itself would not be banned and indeed there may be resultant high levels of demand for use of public transport on Sundays. Individuals and households unable to or opposed to using other modes to the car would also have the choice of rescheduling their weekly activities to avoid the restraint imposed on Sundays.

Both these suggestions may be non-starters and would certainly require a good deal of fine tuning to say the least! However, the early lesson from central London is that supposedly radical measures are able to be introduced without chaos and mutiny and can yield positive results. If we can be open-minded, determined and optimistic then we could yet see a bright future for transport.

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