Urban Mobility and Congestion Charging

Traffic congestion in cities hinders the mobility of people and goods and is increasingly undermining the economic, social and environmental welfare of our cities. Traffic congestion makes cities less pleasant and more expensive places in which to live, work and play. A previous UITP focus paper on ‘Pricing and Urban Mobility’ (March 2001) recommends how best to charge for public transport, parking, company cars and road space. It also tackles the principles driving public transport investments and funding. In particular, it describes why transport fares and taxes should be calculated with reference to marginal social costs to maximise overall welfare. This principle has been proposed in the European Commission’s 1998 White Paper and recommended by the European Conference of Ministers of Transport Resolution 2000/3.

This focus paper extends the analysis to look in more detail as to when charging for road space is appropriate, compared with other pricing policies (such as parking policies) or wider transport policies. It also examines what decision-makers and transport professionals need to do to make such a policy acceptable to the public.

Urban congestion is hampering urban vitality

The demand for road space continues to grow due to increased car ownership, demand for mobility, and freight traffic. Given that cities are already built, the supply of road space and space for parking within cities is finite, and the use of road space therefore has to be managed. Road space is today a scarce resource, all the more so given pressure to improve road safety, bus reliability and conditions for walking and cycling.

Traffic congestion conflicts also with the overall aims of transport policy which generally include:

- Economic growth and improved accessibility through faster and/or more predictable journey times, that help to enable ‘wider’ economic benefits;
- An improved environment, and in particular reducing greenhouse gas emissions and air pollution, but also improvements to townscape, and quality of urban life in general, etc.;
- Integration across policy domains, notably the joining up of transport policy with a sustainable land-use policy and policies to tackle social exclusion.
How to tackle the urban gridlock

There are various means by which this concern can be addressed:

- **Traffic management** that can increase the efficiency with which road space is used;
- ‘**Smart measures**’ which help to raise awareness of the congestion charging scheme OR of the problems caused by traffic congestion and hence improve adjustment of travel behaviour;
- **Additional capacity**, which would allocate both more resources and more urban road-space to the most efficient urban transportation modes, i.e. to **public transport vehicles**, and to create efficient urban transportation networks with their own, dedicated infrastructure – on or under the surface. Well-used public transport can accommodate up to 20 times as many passengers as can private cars on the same road space;
- **Appropriate urban and regional planning measures**, e.g. encouraging higher density development close to city centres, or limiting the availability of parking;
- **Restrictions on traffic** such as outright bans of vehicular access to town centres, the creation of pedestrian zones and designation of public transport-only streets;
- The **price mechanism** whose possible elements include the level and structure of:
  - ‘**per kilometre’ road charging**; in this case, the charge is directly related to the distance traveled within a specified area;
  - **cordon charge**: charges are applied at points crossing a cordon; charging could be one-way and two-way;
  - **area charge**: charging is applied to vehicles being in a specified area at specific periods of time;
  - **parking charges**;
  - **public transport fares**.

The fundamental role of pricing policy

Previous experiences prove that **pricing mechanisms do work**, in whatever form and however applied:

- Behaviour and demand do react to changes in the level and structure of these various prices;
- All can contain congestion and reflect costs road users impose on others and on the community.

They also offer the advantage of **generating revenue** that can be used to help finance transport investment or public services more widely. They are preferable to ‘conventional’ sources of funding which can lead to adverse distortions themselves (for instance, taxes on labour).

However, their relative effectiveness varies, as do the resources and costs required to collect and enforce these different methods.

People's attitudes and perceptions to the acceptability of the different pricing methods also vary.

In general, irrespective of implementation, operational and enforcement costs, a **per kilometre** road pricing scheme will be **more effective** per monetary unit raised than a **cordon charge**, which is in turn more effective than a **parking charge**. The impact of public transport fares changes upon car use and congestion depends greatly on the average fare levels, car ownership levels and incomes in the city concerned.

However, there are more **barriers** to setting up and running a road pricing scheme:

- Political and public acceptance has proved so far to be difficult to gain.
- There is not always a consensus that the problem is sufficiently serious.
- There may also be simple distrust that the systems will work reliably.
- The upfront and ongoing costs tend to be greater than other means of pricing, not least due to the more sophisticated technology required. For instance, with respect to satellite technology, questions can be raised with respect to its reliability in urban areas and with respect to the cost of onboard equipment.
• Other reasons mentioned by objectors include potential loss of privacy as trips are logged, social exclusion of those unable to pay, the fear of potential loss of business for certain sectors such as retailing, and whether alternative modes are adequate.

• There are also those who object to what they regard as additional “taxation”* and a restriction of personal freedom.

However, acceptance can grow when people experience it functioning.

How to optimize the policy mix?

There is no single policy that best fits the circumstances that different cities and towns face. The factors that affect the optimal policy mix include:

• The objectives of that city’s transport policy, that is the degree to which it wishes to focus on different and sometimes conflicting aims of journey reliability, journey speeds, possible economic impacts, greenhouse gas emissions, etc. A pricing scheme can also take into account the environmental characteristics and the energy efficiency of a vehicle in order to serve objectives in these fields;

• Public acceptability: The political situation, plus the culture and heritage of the city, including the weight decision-makers wish to give to distributional and equity impacts of different types of charge;

• Type and size of city: the bigger the urban area, the more likely that traffic congestion is a significant problem that imposes significant costs;

• The nature of the traffic patterns: where through traffic is substantial, for example, parking charges are less likely to be an effective solution;

• Costs: cities will have different ability to afford the set up costs (if applicable) and will have a different response to the running costs thereafter, given the different technologies needed to price effectively;

• The degree of sophistication required to meet objectives through for example differential prices by time of day or level of consumption;

• The offer of alternative mobility forms, especially the public transport offer, its chance for improved services or extension and its additional cost to society.

Of course, these factors can change over time as technology, experience and familiarity evolve. Indeed, they may change even over the course of an individual scheme development. For example, a proposal may win political and public acceptability initially, lose support as the detail emerges, only for support to grow again after implementation as benefits appear.

* Though it is possible to restructure transport taxation, such as vehicle duties or fuel taxes so that the overall level of taxation need not necessarily increase.
Recommendations

Congestion charging is the most effective tool for demand management. It will improve sustainable economic development, ensure quality of life, improve public transport and lead to more fluent and cleaner traffic.

UITP recommends the following:

- Establish a sound transport policy demonstrating the necessity and urgency of a pricing scheme;
- Use strong leadership to convince the public of the benefits and to counter potential mistrust;
- Raise awareness on the seriousness of the situation and explain that ‘business as usual’ is simply not an option any more;
- Involve a wide set of stakeholders for discussion of implementation, while being firm on the principles;
- Be transparent on subsequent outcomes and performance;
- Build a sense of fairness through strong commitments on the use of additional revenues. Links between the scheme and improvements to alternative modes should be explicit;
- Mitigate the impacts on road users through good quality traffic management and/or a reduction in other fixed taxes or charges upon car owners;
- Keep the scheme simple, reflecting not just the need for public acceptability but also to accommodate infrequent users. This means limited exemptions, simple methods of payment, and high levels of technical reliability. A problem that could arise in the future is incompatibility of various city or even national systems, causing confusion and extra cost for users. There may be a need to define Europe-wide technical standards;
- Improve public transport, if possible even before detailed discussion of any potential scheme. Other transport means like car sharing, walking or cycling should equally be promoted;
- Allocate at least a part of the income from congestion charging to help finance these accompanying measures.

This is an official position of UITP, the International Association of Public Transport. UITP has over 2900 members in 90 countries throughout the world and represents the interests of key players in this sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport world-wide.