



MEDIA BACKGROUNDER

INTEGRATED URBAN MOBILITY

Mobility is the essential pattern of daily urban life. In 2025, 60% of the world population (4.5bn people) will live in cities. Mobility in urban areas – in terms of the number of trips – will increase by 50% compared to 2005, reflecting the growth of the urban population and the rise of emerging economies. The consequent increasing mobility demand now requires ever-more sustainable solutions. For cities to grow sustainably and be enjoyable places to live, urban policies and public transport systems need to be developed in an integrated way that encompasses both urban planning issues and mobility service provision.

In 2009, UITP launched its PTx2 strategy to double the public transport market share worldwide by 2025 with the vision of making cities better places to live and work. Integrated urban mobility is one of the solutions to make this vision reality.

Transport systems have always had a crucial influence on urban development patterns. Between the end of the 19th and the beginning of the 20th century, public transport shaped cities by creating dense and compact city centres, with street grids and buildings oriented towards public transport and pedestrians.

The last 50 years were characterised by a model of dispersed urban development (sprawl), motivated by the tremendous increase in private car use. This model not only consumes space and non-renewable energy, but it is also the reason for high external costs in terms of traffic congestion, pollution, road accidents and social segregation.

Already a characteristic of cities in the United States, Canada and Australia, sprawl is now becoming a widespread feature the world over. The trend is towards uniform outlying urban areas, dominated by the 'single living unit, shopping centre, car park' formula, and monotonous urban planning, with often mediocre architecture.

Car park capacities are calculated to cope with maximum demand (the last Saturday before Christmas, for example) and cut off vast, flat expanses that are polluted by the oil deposited by parked vehicles. This causes a drop in the ground water level, irregular water flow, and pollutes neighbouring watercourses.

Citizens and policy makers are well aware of the problems caused by urban sprawl and growing car dependency, but not of their scale or their evolution. More often than not, they are unaware that the cost to the community of the car-based urban sprawl development model is far higher than the cost of an average/high-density city well served by public transport.

Benefits of integrating public transport and urban space

Integrating development projects with public transport can lead to improved quality of life, socio-economic development and urban renewal.

Cities integrating public transport and sustainable mobility in their urban development plans can gain different benefits in terms of:

- Saving costs (for individuals and the community);
- Saving the environment;
- Saving urban space.

Saving costs for the individual and the community

Cities which spend the least on the mobility of their inhabitants are those whose density is average or high and where journeys are chiefly made by walking, cycling and public transport.

The cost of transport for the community varies from 5% of GDP in dense cities with high public transport use to over 12% in sprawling cities where the car is virtually the only mode of transport*.

In countries such as the USA, with a car-based economy, the cost of mobility is twice as high as the same cost in countries relying on public transport.

Singapore, Hong Kong and Munich spend about 6% of their GDP on mobility, whereas Houston spends 14%, and that includes both the cost for the society and individuals.

The higher the density, and the higher the proportion of journeys made by walking, cycling and public transport, the more economical the transport system will be.

The high cost of transport in low-density cities stems to a large extent from the high level of motorisation they engender, given that walking and cycling are ill-suited to long-distance mobility needs. Moreover, journeys are predominantly made by car, which costs the community more than public transport in average or high-density cities.

In low-density cities, a modal shift from the car over to public transport (where it exists) would have little impact on the cost of transport for the community, given that public transport is ill-suited to serving low-density areas – except for routes within or to centres, where the economic efficiency of public transport always outperforms that of the car.

This means that relying on the private car represents a burden for citizens and national economies, meaning a bad strategy for countries' budgets and employment.

Saving the environment

The transport sector is the largest energy-consuming sector in Europe, with a yearly consumption of 140 million tons of oil equivalent and GHG emissions of 470 million tons of CO₂ equivalent for urban transport alone.

* Source: Millennium in Cities Database, UITP, 2006

Cars consume four times more energy per passenger-kilometre than public transport and are responsible for 3.5 times more GHG emissions than public transport.

The increasing volume of travel by private cars, which rely predominantly on fossil fuels, is one of the major challenges to be tackled in order to reduce energy consumption and increase energy efficiency in our society and economy.

In light of this, integrating public transport into the urban fabric can help make urban life healthier, safer and more enjoyable, due to greatly improved air quality and reductions in CO₂ levels.

By 2025, in a 'PTx2'[†] scenario where the public transport market share doubles, urban transport energy consumption and related GHG emissions would only increase marginally, saving around **170 million tons oil equivalent**. This would avoid the emission of around **550 million tons CO₂ equivalent** in 2025, compared to the scenario whereby the current trend of an increase in private motorised modes prevails.

The least-polluted cities are those where vehicles meet tough emissions standards. Pollution decreases when the proportion of journeys made by walking, cycling or public transport increases, in cities with equivalent technical vehicle performance and density.

Public transport, despite already having an excellent track record in ensuring low carbon emissions compared to other transport modes, is also prepared to do more to reduce its carbon footprint.

Currently, between 40 and 50% of public transport is already powered by electricity. Public transport is therefore already an established electromobility provider.

Furthermore, in recent years, public transport road vehicles have also benefited from technological progress. **Buses** account for 50-60% of the total public transport offer in Europe, and 95% still use diesel fuels. Buses powered by electricity, but also by second-generation biofuels, are already included in long-term decarbonisation initiatives.

Saving urban space

In many cases, a public transport upgrade is actually the prime impetus for the revitalisation of an urban area.

Car infrastructure and vehicles take away valuable urban space needed for citizens in their daily lives and for access to services. A better balance in allocating space to cars and public transport, walking and cycling creates a better urban environment.

The car parks attached to most shopping malls, cinemas, etc., whose capacities are calculated to cope with maximum demand, are actually most of the time empty and deprive citizens of green areas or other social facilities.

If the current trend prevails and private motorised modes increase, in future cities will not be able to afford the space for parking, as some urban neighbourhoods are already saturated with cars. This is also the basic reason why people prefer to escape from the city to live in the suburban areas or countryside. This trend causes housing *segregation*, whereby inhabitants have to be able to drive in order to have convenient access to urban activities.

[†] 'PTx2': Doubling the public transport market share worldwide by 2025, www.ptx2uitp.org

A vast occupation of urban space by private motorised transport is also the major cause of congestion problems, with the corresponding increase in journey time.

On the contrary, good integration of public transport and urban planning allows citizens to claim back their urban environment and gain back time; it gives people equal freedom of mobility and improves accessibility to services and urban activities. As a matter of fact, public transport needs less urban space than cars and their infrastructures.

Whilst 75 people can be carried by 60 cars, the same number can be carried by a single bus. Furthermore, in cities with good radial links on rail modes and metro connections, public transport in congested centres is often faster than the car, particularly during peak times.

The greater the urban space covered by public transport services, the higher the public transport ridership. The most attractive networks are those providing intensive coverage of the metropolitan area on lines with sufficient transport capacity. As for a virtuous circle effect, a real living place that functionally incorporates public transport (as opposed to a mere public transport node) not only creates more interesting neighbourhoods, it also enables households to be more public transport-reliant.

Well-designed areas where sustainable modes are given priority are characterised by higher public transport use and lower car use. Attracting more people to use public transport also improves its productivity and its image, creating a virtuous circle where public transport can offer enhanced services and attract more riders.

Keys to a harmonious integration between public transport and urban space

In order to achieve a good integration of public transport and urban space, two levels must be considered:

- policy, political and institutional level;
- functional measures level.

Policy, political and institutional level

National and regional governments have a major role to play by providing a coherent and integrated legal administrative framework and strong support for local governments, in order for them to harmonise mobility and urban-planning policies.

Local authorities must be empowered to ensure and oversee the proper functioning of the sector. It is essential that local and regional authorities hold the relevant powers to guarantee that policy goals set at national level can be achieved locally.

Setting up an organising authority

In some cases, where no institution is in charge of urban-planning policies and mobility, setting up an **organising authority** for public transport is a first crucial step to guarantee the framework for successful public transport.

Organising authorities may be responsible for the management of public budgets for ordering or co-financing public transport services. They may also be the owner or manager of public transport infrastructure and be in charge of financing new investments. Organising authorities help to achieve the political aim of a high modal share for public transport.

In different places, the institutional and regulatory framework for public transport services may vary, reflecting different perspectives on the objectives of public transport (social, economic, environmental aims) and how these can be best put into practice.

Best practices

Nantes is streamlining its services and organisational structure with a view to bringing together all the functions and services linked to transport and mobility under a sustainable mobility organising authority, replacing the former transport authority. Thus all public transport modes and mobility services will be brought under one umbrella, with responsibilities ranging from strategy to delivery and operational management, alongside the definition of public policies and services.

Dubai has established an authority covering all modes of transport – collective and individual. Dubai Roads and Transport Authority (RTA) is an integrated multimodal authority regulating and organising transport (collective and individual) in the whole Emirate. RTA is in charge of planning, infrastructure development and management, providing or outsourcing operation, ticketing, information, etc. It directly reports to the Dubai Ruler and therefore has a very important and strategic role.

Developing master plans

Sustainable and holistic **master plans** that better balance the space allocation between cars and public transport, walking and cycling, produce a wise development of land use and transport networks.

Best practices

Greater **Copenhagen's** Master Plan, established in 1947, directed dense development along five existing railway corridors. Although Copenhagen's growth and traffic patterns have evolved since the establishment of the plan, maintaining and developing the so-called 'finger structure', with its green wedges of natural landscape between the five corridors, remains the overarching principle of regional development policy. This requires an efficient network of radial and transversal public transport connections.

Independently from the finger plan, Copenhagen's metro line is also the backbone of the development of a new neighbourhood.

Odense Municipality (Denmark) has submitted a Master Plan for sustainable transport solutions that are intended to lead the way towards the goal of CO₂-neutrality in 2025. It is a comprehensive strategy that aims to both reduce car traffic in the inner city and increase individual mobility through improved conditions for pedestrians, cyclists and public transportation. Odense already occupies a prominent position among the world's cycling cities, and the new Master Plan can be seen as an effort to consolidate this position.

Functional measures level

The success of public transport depends also on applying measures to curb traffic and parking (demand management) and promoting shifts towards more sustainable travel choices.

Successful transport demand management combines improved travel options, constraints on excessive car traffic (including pricing) and smart integrated land-use policies.

Congestion charging and parking policies

Charging for car use and parking has two advantages: it encourages the use of more sustainable modes of transport and it also constitutes a source of funding for public transport. Revenues from urban tolls are frequently mobilised for investment in public transport, for instance in London. In Oslo, they also cover a part of public transport operating costs. Parking revenues support public transport in cities such as Montpellier, Genoa and Perth.

Congestion charging is considered one of the most effective demand-management tools and is a well-known measure based on polluter-pays and beneficiary-pays principles. Part of the income generated from congestion charging can be allocated to financing public transport and compatible modes like walking and cycling.

Best practices

Inspired by the results in Stockholm, **Gothenburg** has approved the introduction of a congestion charge to be launched in 2013. The congestion charge scheme has been included in the Swedish infrastructure package as a way to curb the negative effects of increased car traffic in central Gothenburg and to contribute to less congestion. But it is also an important prerequisite for financing investments in the package. In 25 years' time, it is estimated that 7-8 billion Swedish kronor will be derived from the congestion charging.

Charging for roadside parking and in public car parks must be sufficiently dissuasive to discourage car use to travel into (and within) city centres. In this respect, in cities like London, Copenhagen and Vienna, hourly rates in public car parks and roadside spaces can be EUR 5 or more.

Many Eastern European capitals are not simply limiting parking in the centre, but are also charging very high hourly parking rates compared to the cost of travelling on public transport.

To respond to demand for flexibility and a high level of convenience in terms of urban mobility, other soft measures and additional instruments can be put in place.

Combined mobility

Public authorities can decide on an adequate policy framework and together build up a mobility policy aiming to offer citizens the possibility to live in their city without owning a car. On the other hand, public transport can develop partnerships with **combined mobility** providers and overcome some of its shortcomings in order to meet the mobility requirements of modern citizens.

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Car-sharing, taxis and shared taxis, bicycle and bike-sharing, car-pooling, demand-responsive transport, car-rental, etc., are services that can complement the classic fixed line- and timetable-bound public transport services and, together with walking, they form a complete and coherent mobility solution.

Best practices

Transport for London has experienced rapid acceptance of its bike-sharing scheme with 2.5 million journeys recorded in the first six months of operation (August 2010 - January 2011). The scheme has just under 5,000 bicycles at 315 docking stations and the first half hour of use is free of charge.

In **Switzerland**, public transport use by car-sharing members increased by 25% after they joined Mobility, the Swiss car-sharing provider. The Muheim study clearly demonstrates that car-sharing users travel in a more sustainable way and confirms the modal shift towards more sustainable modes.*

* Source: Evaluation Car-Sharing (Interface Institut für Politikstudien, Luzern, Infras AG, Zürich, 2006)
http://www.bfe.admin.ch/themen/00526/00541/index.html?lang=en&dossier_id=00888

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