CHAPTER 9

INSTITUTIONS AND GOVERNANCE FOR URBAN MOBILITY

Institutional and governance frameworks are the structures through which political, technical and financial decisions are translated into resource allocation and priority setting for implementing urban mobility plans, programmes and projects. No matter how good the policy recommendations, their implementation is dependent upon how fit-for-purpose these institutional and governance frameworks are to direct, manage, resource and deliver them. Visions of sustainable urban mobility cannot be translated into plans, nor can plans be successfully implemented, without addressing the very sustainability of the key organizations involved and their institutional and governance frameworks.

Institutional and governance frameworks and their related networks are critical to how well (and how fast) urban transport infrastructure and services are planned, appraised, delivered and operated. They are also essential to how well joined-up urban mobility planning is with land-use developments, and how consistent both are with the declared goals of sustainable development.

In many cities, formal institutions that affect the transport sector frequently operate in a less than desirable manner. This is particularly the case in developing countries. Notwithstanding this, people and goods continue to circulate, and indeed in many cases traffic continues to rise. The issue here, however, is with what suboptimum level of efficiency is this achieved, at what opportunity cost and at whose cost does this growth take place?

The chapter starts with a clarification of the main terms used in the discussion of urban mobility institutions and governance. This is followed by a regional review of current conditions and trends of institutional and governance developments that affect urban mobility policy-making, planning and management and ultimately, many aspects of urban land-use developments. A number of key institutional and governance challenges and underlying influences facing cities are then drawn from this review. The chapter also contains a discussion of policy responses to these challenges, with some detailed examples drawn from good practice. It ends with concluding remarks and lessons for policy makers.

UNDERSTANDING INSTITUTIONAL AND GOVERNANCE FRAMEWORKS FOR URBAN MOBILITY

Institutional and governance frameworks and their related networks are critical to how well . . . urban transport infrastructure and services are planned, appraised, delivered and operated

The interaction of the institutional structure and agency actors is characterized by both formal dimensions (i.e. rules and laws) and informal dimensions (i.e. customs and traditions), which impact relations between different branches of government.[1] In some instances, there are institutions (such as trade unions, city chambers of commerce and industrial lobbying groups) that – although not formally part of the urban transport decision-making processes – possess varying degrees of influence. The extent they do reflects their political influence and often the power of their purse. Enlightened institutional and governance frameworks seek to make these influences transparent.

Well-functioning institutions and a high level of political support are essential for creating and maintaining good quality infrastructure and services for urban mobility

Well-functioning institutions and a high level of political support are essential for creating and maintaining good quality infrastructure and services for urban mobility.[2] Urban mobility is also impacted by parties from outside the transport sector associated with land use and social and environmental impacts. In developing countries in particular, powerful non-specialist stakeholders can exert influences that seriously undermine efforts at achieving integrated development between urban movement and land use.[3]

The practice of policy-making and planning for urban mobility generally rests with institutions at the level of an urban area. However, as this may not coincide with the administrative boundary of the

dominant city, organizations at a national (and sometimes regional/provincial) government level also set frameworks that can significantly influence policies that are (and are not) adopted.[4] These influence the extent of the institutional integration of transport modes in an urban area, as well as the arrangements for their integration with other sectors. This is particularly the case with respect to land use, emissions, climate change, safety and finance. In some major cities of developing countries – where national (or regional/state) governments involve themselves extensively in urban transport policy decisions – many problems can arise. This is so because such levels of government are typically more powerful and exert more influence/control over budgets assigned to the urban level. Furthermore, city authorities typically lack the strong management and professional staff capabilities necessary to tackle the challenges that confront them. As a result, while they may be fully aware of what needs to be done, coordination between the two levels of government is often not easy and frequently unequal.

Even in the well-ordered cities of many developed countries, the informal sector and NGOs play an increasingly important role in facilitating and encouraging sustainable urban mobility

The role of informal structures and organizations in the urban transport sector needs to be emphasized. These are especially relevant to public transport, freight movement and non-motorized transport. Even in the well-ordered cities of many developed countries, the informal sector and NGOs play an increasingly important role in facilitating and encouraging sustainable urban mobility. The involvement of such informal structures and organizations is essential for good governance and a 'bottom-up' decision-making process that enables all stakeholders to participate. In the case of urban mobility, such decision-making should ideally embrace all key stakeholders involved in the provision of urban transport infrastructure and services, as well as those impacted by decisions the sector makes.

Likewise, institutional and governance frameworks should address concerns regarding obstacles to the effective participation of the private sector. Thus, enabling and regulative mechanisms need to be put in place by government to ensure that information employed to support urban transport proposals are comprehensive, accurate, impartial and transparent.

By and large, European cities possess a well-educated interdisciplinary professional class to serve the needs of urban mobility in particular and urban development in general

CONDITIONS AND TRENDS

Different parts of the world have different governance structures for urban mobility delivery, with various institutional stakeholders influencing urban development and mobility trends. It is particularly important to note that the policy and planning challenges of urban mobility in developing countries and in countries with economies in transition differ significantly from those found in urban areas of developed countries. In general, the resources (human, technical and financial) and institutional frameworks at the disposal of policy-makers and planners in such cities are typically less well developed. Thus, the sections below focus on selected conditions and trends of institutional developments and governance, and their underlying influences, in developed countries, countries with economies in transition and developing countries.

Developed countries

The institutional and governance frameworks for urban mobility in most of Europe reflect the circumstances of mature developed economies and institutional and governance arrangements. By and large, European cities possess a well-educated interdisciplinary professional class to serve the needs of urban mobility in particular and urban development in general. The larger more populated countries all have strong, multi-tier governments, as do the smaller northern European countries. Significant differences remain, however, particularly with respect to funding levels, technical capacities and organizational efficiencies among many of the Southern European countries. In these countries, institutional and governance arrangements and technical capacities are less well developed and resourced. There is, nevertheless, cross-fertilization of ideas between all these countries through numerous EU initiatives, with some significant improvements observed.[5]

The city of Nantes, France, has succeeded to integrate the decision-making agencies in and around the city into one body.[6] These arrangements provide various capabilities with the agency responsible for highway and public spaces, housing, town planning and land-use development. This body also has the competence for all aspects of organizing public transport in the metropolitan area in which it has made some notable advances. Since 2008, there has been only one agency responsible for all mobility matters in Nantes.[7] This organization is 'responsible for strategy as well as operational management of a whole range of aspects of sustainable mobility, including roads and highway planning, traffic management, traffic and public road management, cycling and parking policies, and management including all off-street parking such as multi-storey car parks, park and rides and other sustainable mobility services such as car-pooling and car sharing'.[8]

Similar developments are currently underway in London, where surface and underground rail systems in the metropolitan region are increasingly integrated as part of the Mayor's Transport Strategy for the Greater London Authority, which comes directly under the office of the mayor.[9]

Sixty years of private car-orientated transport infrastructure investment and suburbanization in the US have contributed to widespread urban traffic congestion[10] and created a significant urban mobility divide, which has seriously affected the mobility of

those who cannot afford the ownership of a private car.[11] This car dependency has been accentuated by an institutional emphasis on the importance of personal mobility – whether related to distances that need to be travelled or to the general limited availability of public transport, particularly in lower-density cities.[12]

Given the history of motorization in the US, it is perhaps unexpected that the country has introduced legislation seeking to introduce a revolution in the way urban transportation investments are planned and implemented.[13] This legislation looked to a hierarchy of supporting transportation plans and programmes introduced and carried out by metropolitan planning organizations in cooperation with states for major urban areas. However, the act does not give these planning organizations any new legal authority in this area. Instead it emphasises 'partnerships' between all relevant agencies, in order to promote area-wide interests and goals.[14]

In Canada, the federal government acknowledges that insufficient funding, accompanied by fragmented planning and implementation of urban mobility systems and related land use, are the major obstacles to establishing efficient urban transportation networks.[15] As a result, the Greater Toronto Transportation Agency was set up. This provided 'the governance mechanism to plan, fund and deliver integrated transportation and related land use for the entire urban region comprehensively and consistently over time'.[16] Similarly in Vancouver, the governance structure for urban transport attempts to coordinate and achieve integration and a balance between different modes. To this end the Government of British Columbia created TransLink to assume many transportation responsibilities previously held by the provincial government (in 1998). TransLink is responsible for the regional transportation network of Metro Vancouver in British Columbia, including public transport and major roads and bridges.[17]

Australia has a federal governance structure, with responsibility for the integration of land use and transport largely resting with state and local governments. Although all recent major transport infrastructure investments in its main cities have been made within the same federal institutional context, the responses to urban mobility challenges have been quite diverse.[18] In the city of Perth, transport and land-use planning portfolios reside within the Western Australian Department of Planning and Infrastructure, which has its own minister in the state government. Public transport is the responsibility of the Public Transport Authority, a government agency whose responsibilities cover public transport (bus, train and ferry services) in Perth and regional centres. Two other agencies (Main Roads and Department of Transport) are responsible for other transport matters (i.e. major and minor roads, transport safety, etc.).[19]

New Zealand has seen several new developments in the institutional and governance structure of its major cities. From the perspective of the integration of urban transport, 'the restructuring of metropolitan Auckland is one of the most substantial and far-reaching local government restructurings in recent years. [It offers a] unique governance framework for local authorities' to manage council-controlled organizations.[20] The capital city of Wellington has also employed a regional approach to the planning and delivery of its transport infrastructure and services.[21]

Metropolitan Auckland . . . offers a unique governance framework for local authorities to manage council-controlled organizations

Countries with economies in transition

Democratization, privatization and decentralization have been the three main institutional change processes occurring in countries that emerged from communism in Central and Eastern Europe. At the end of communist rule in the early 1990s, these countries had strong, centralized decision-making systems, and a tradition of state planning of urban land use and transportation. They also had a relatively well-educated professional class working in secure formal institutions, a dominance of public transport over private car use, and a relatively deferential civil society.[22]

With democratization, the strength of influence of different stakeholders changed. The voice of the citizenry became more fragmented, as wealthier residents abandoned their dependency on public transport systems. At the same time, many public transport operators found themselves unable to extend their service to low-density developments on the periphery. Operators simultaneously suffered from drastic reductions of subsidies that made public transport more expensive to provide and unaffordable to many potential users.[23] The sharp reductions in government subsidies in Poland, for example, forced public transport services to raise fares drastically. Meanwhile, under-spending led to poorer public transport services, lower operational efficiencies and a reduction in public transport hardware and related infrastructure investment. This resulted in a gap developing between revenue and expenditure to a point that became exceedingly difficult to bridge.[24]

The sharp reductions in government subsidies in Poland . . . forced public transport services to raise fares drastically

Privatization and neoliberal influences have resulted in much more complex institutional decision-making developments. Together with the absence of an understanding of how market forces operate, there has been an (unintentional) gradual undermining of economic, social and environmental dimensions of sustainability by governments, as a result of their extending the time between plan-making and implementation.

Decentralization – in the form of transfer of responsibility for regional and local infrastructure and public transport services to provincial and local governments – has in some cases been excessive.

In the case of Poland, 'the State has gone too far in decentralizing all public transport responsibilities to the cities and has not faced squarely the complicated issues related to urban roads' and traffic issues.[25] The situation in Russia and many other countries (e.g. Latvia, Lithuania) is similar. Here the municipal sector has remained fragmented and suffers from poor administrative capacity, which has contributed to weak cooperation between independent local governments. This is particularly harmful in efforts to address transport problems in metropolitan areas where good cooperation between central city and suburban municipal governments is crucial.[26]

Developing countries

In most of Africa, . . . the fact that (too) many ministries are involved in the urban transport sector at the local level contributes to actions that can prove contradictory

In most developing countries, urban transport institutions and governance systems have been unable to keep pace with growth in urban population and mobility needs. The urban transport sector is characterized by its rapid motorization, deficient public transport supply, informality in its mobility systems, congestion, pollution and high traffic fatalities – with differentiated impacts, in different cities and between trip-makers (according to income groups, gender, age, disability and level of education).[27]

Africa

In most of Africa, and notwithstanding positive developments – such as the setting up the Executive Council of Urban Transport in Dakar, Senegal (Box 9.1), the Lagos Metropolitan Area Transport Authority in Nigeria (Box 9.14), and the introduction of coordinated urban mobility plans in South Africa[28] – poor coordination between the numerous institutions in urban transport prevail. This has led to problems in developing unified and integrated urban mobility policies. The fact that (too) many ministries are involved in the urban transport sector at the local level contributes to actions that can prove contradictory. There is also a widespread underfunding of urban public transport and rarely any significant formal involvement of transport users (or civil society) in the governance of cities. This is reflective of the widespread absence of decentralization in the transport sector, which remains controlled by national governments. In countries such as Senegal or Burkina Faso, for example, urban transport is not included in the sectors concerned by the decentralization process.[29] In the case of Egypt, efforts to centralize responsibilities for urban transport have recently taken place in greater Cairo where a Public Transportation Regulatory Authority was established by presidential decree in 2012, to control all urban transport modes in the city.[30]

Latin America and the Caribbean

The institutional and governance frameworks in the field of urban land use and transport in Latin America and the Caribbean are strongly influenced by those of developed countries (particularly, North America).[31] Apart from some urban highway investments, the major new institutional initiatives in the region relate to efforts to formalize public transport modes and to improve formal public transport services through the introduction of new BRT systems and metro extensions. As noted in previous chapters, 'cities like Curitiba, Brazil, have a long history in implementing innovative and integrated forms of transport. Bogotá and Medellin in Colombia are continuously incorporating new and increasingly participative forms of transport decisions'.[32]

However, in Santiago, Chile, 'urban transportation is managed through a disparate and fragmented institutional framework, distributed among public institutions of distinct levels with distinct areas of responsibility . . . structured across . . . three . . . levels of government' involving several agencies at each level.[33] Santiago's 2000–2010 urban mobility plan was prepared in response to this disparate and

Box 9.1 The Executive Council of Urban Transport (CETUD), in Dakar, Senegal

CETUD was established to resolve the dispersion of jurisdiction between various central and local institutions concerned by urban transport in Dakar, and to coordinate urban transport policy-making. CETUD has been assigned the following responsibilities:

- Decide which routes to be served, the corresponding authorization quotas for public transport and their technical operating terms.
- Prepare 'call for tender' documents, sign agreements with the registered transporters and control implementation of contracts.
- Propose tariff policies to the appropriate authorities.
- Identify the constraints of the public service and determine the relative financial compensation.
- Develop criteria for admission to the profession of public transporters.
- Implement studies and initiatives for training, information and promotion for urban public transport.
- Coordinate the different types of public transport; and in particular, arbitrate the division of profits in the case of tariff integration.
- Develop and support the creation of shares and investment programmes to improve infrastructure, traffic and road safety services.
- Improve the condition and quality of the transport fleet to reduce pollution.

Source: Godard, 2011b, p57.

fragmented institutional set-up (Box 9.7). Comprised of 12 programmes, one included the modernization of the public transport system and the coordination and integration of decisions relating to urban development and transport – known as Transantiago.[34] This programme sought the creation of a new institutional, operational and legal framework for an urban public transport system that restructured the bus network on a trunk-feeder basis. It was not, however, assigned the necessary executive powers, nor was it adequately resourced.[35]

■ *Western Asia*

The institutional and governance structures for urban transport in Western Asia are as diverse as the different governance systems found there. Notwithstanding the differences, 'a decentralized model of urban transport governance appears to be emerging . . . throughout the region, as a result of recent decentralization reforms related to rapid urbanization'.[36]

Oil-rich countries, including the Gulf States and Saudi Arabia, confront urban land-use and transport developments spawned by dramatic increases in affluence. This wealth has enabled their governments to develop urban transportation systems similar to those found in developed countries. This has been accompanied by the establishment of some well-resourced, sophisticated new institutional and government frameworks for urban mobility, such as the Urban Planning Council in the United Arab Emirates. Populous countries, such as Turkey and Iran, are much less well-resourced. They have weaker and more stressed institutional capacities. Poorer countries, such as Yemen, have inadequately developed institutions for urban mobility, more akin to those of the poorer parts of South Asia or Sub-Saharan Africa.[37]

Within Western Asia, it is common that competition or rivalry prevail between government agencies responsible for different aspects of urban transport and land-use development. A frequent response to such challenges is for government to create independent public agencies devoted to the planning and delivery of projects. In Istanbul, for example, there are several such dedicated urban transport authorities whose responsibilities are not well integrated and often compete.[38]

Within Western Asia, it is common that competition or rivalry prevail between government agencies responsible for different aspects of urban transport and land-use development

■ *South Asia*

The institutional frameworks for urban transport and land-use development in cities of South Asia generally exhibit a strong multi-tier set of national, regional and local government plus quasi-government institutions, accompanied by a significant growth of private-sector transport operators and investors. With fast-growing demand for urban mobility in the region, transport institutions in cities face a host of challenges (Box 9.2). Such institutions are largely geared to address formal traffic and transport concerns, leaving informal and non-motorized modes to fend for themselves.[39] The lateral links between the institutions – in functional as well as geographical terms – are typically poor compared to their vertical institutional links. So much so, that 'it is being increasingly realized that the gap between planning and implementation can not be bridged without the institutional reorganization, capacity building and streamlining of the procedures'.[40]

In cities of Southern Asia . . . the lateral links between the institutions – in functional as well as geographical terms – are typically poor compared to their vertical institutional links

However, in several Indian cities – including Delhi, Mumbai, Jaipur, Hyderabad, Chennai and Bangalore – unified metropolitan traffic and transport authorities have been set up (Figure 9.1).[41]

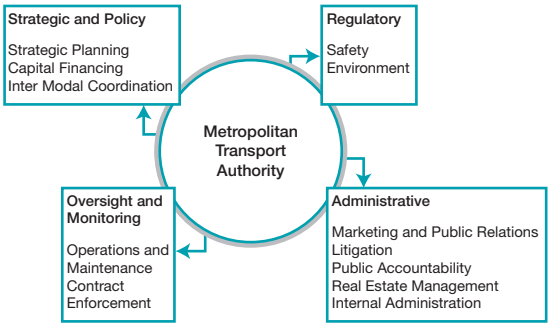


Figure 9.1
Functions of unified metropolitan transport authorities in India
Source: Jain, 2012, p591.

Box 9.2 Typical challenges of urban transport institutions in South Asia

Under-resourced institutions, lacking in overall capacity to plan, execute, maintain and deliver affordable sustainable urban transport.

Fragmented policy formulation and implementation with lack of cooperation among multiple ministries and transport agencies.

Lack of finances for transport infrastructure and public transport services resulting in extensive institutional and governmental support, concessions and subsidies.

Insufficient financial procedures and accounting/audit systems.

Bureaucratic procedural constraints that impede the delivery of urban transport infrastructure and services.

Inadequate legal and enforcement frameworks and capacities needed for urban transport and land-use developments.

Absence of comprehensive information systems, disclosures and public participation, leading to corruptive practices.

Source: Jain, 2011, p37.

These have been introduced to promote a more effective response to city transport and related land-use challenges. There has been much less success to rationalize urban transport institutions and governance in other countries in South Asia.

South-Eastern Asia

South-Eastern Asia presents a very mixed picture in terms of institutional development and governance for urban transport. This is due to the very different forms and levels of governments that prevail, their different colonial histories and subsequent evolution of their political processes.[42] It is, however, common that many of the responsibilities related to urban movement in the region are entrusted to a range of different national ministries, as in the case of Jakarta, Indonesia.[43]

In Thailand and the Philippines, strong regional political differences complicate the situation for transport ministries attempting to work with city governments

In Thailand and the Philippines, strong regional political differences complicate the situation for transport ministries attempting to work with city governments. Manila's institutional arrangements have remained virtually unchanged for generations. Although the Metro Manila Development Authority is responsible for development planning, transportation and traffic management, as well as urban renewal and land-use planning, it does not have full jurisdiction for the transport sector.[44]

In terms of possessing institutional arrangements that enhance the integration of land use and transportation, as well as the integration of modes within the transport sector, Singapore is perhaps the exception in South-Eastern Asia. Much of the effectiveness of this integration 'is greatly assisted by [Singapore's] two key agencies for planning and policy, namely: the [Urban Regional Authority] . . . for spatial development and land use, and the [Land Transport Authority] . . . for all modes of transport'[45] (Box 9.3).

Box 9.3 The Land Transport Authority of Singapore

Established in 1995, the Land Transport Authority is responsible for planning, policy and regulation of all urban transport modes in Singapore. This made Singapore one of the pioneers of integrating many urban transport responsibilities within one organization. The Land Transport Authority also constructs and maintains roads, the metro system and other public transport infrastructure, in accordance with the provisions of the concept plans.

Source: Barter and Dotson, 2011, p4.

Eastern Asia

In Eastern Asia, the influence of the strong institutional and governance frameworks for urban mobility in Hong Kong and Singapore has been particularly noticeable in mainland China.[46] Table 9.1 summarizes three main institutional models for the management of urban mobility in mainland China.

Strong political support for key urban transportation projects has helped achieve some aspects of long-term policy-making and planning in China. Tensions, however, exist in some instances between central and local interests, as well as between public and private sector interests. On occasion, these have prevented the emergence of an integrated institutional approach to land-use and transport development.[47]

With the increasing technical sophistication of local professional cadres there are several prom-

Table 9.1

Institutional models for urban mobility, mainland China

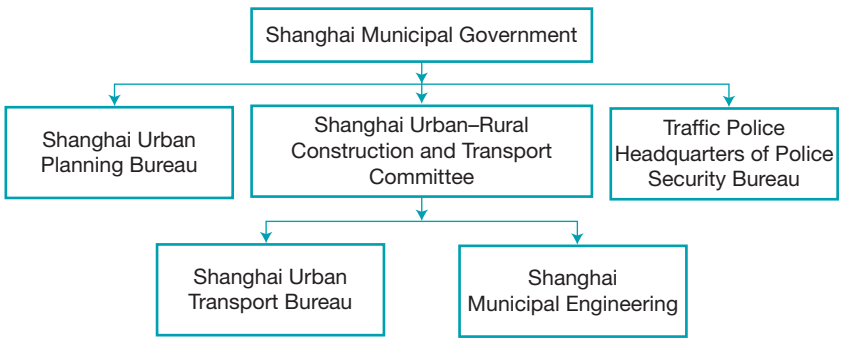
Management systems model	Examples of cities
Multiple regulations on transport managed collectively by the Urban Transport Bureau, the Municipal Engineering Bureau, the Urban Construction Department, the Police Security Bureau, etc.	Chengdu, Fuzhou and Nanning.
Overall regulation on urban and rural transport, managed only by the Urban Transport Bureau.	Shenyang, Harbin, Hangzhou, WuLuMuqi, Xining, Changsha and Lanzhou.
General regulation on transport, managed by only one department, typically the Urban Transport Commission, which has municipal government responsible for the regulation of transport plans, highways, public buses, taxis, urban railways, air transport and other land-based mobility modes.	Beijing, Shanghai, Guangzhou, Chongqing, Shenzhen and Wuhan.

Source: Zhou and Szyliowicz, 2005.

Figure 9.2

Organizational structure of transport and land-use institutions in Shanghai, China

Source: Pan et al, 2008.



ising innovations in urban-mobility planning in China. Shanghai exemplifies this with its rationalization of urban land-use and mobility management structures. Here urban transport and related land-use development functions are divided among three departments: the Urban Planning Bureau; the Urban-Rural Construction and Transport Committee; and the Traffic Police Headquarters (Figure 9.2). Rail and water transport – which are highly significant in most Chinese cities – however, are usually outside of city control and are administered regionally or at the state level.[48]

CHALLENGES AND UNDERLYING INFLUENCES

This section describes the main challenges and underlying influences related to urban transport institutions and governance worldwide. These have been organized below under four main categories, namely challenges of adaptation; administration and governance; mobility policy, plan-making, management and regulation; and resourcing and capacity-building. Even though the challenges are presented below as separate themes, it is important to appreciate the interconnectivity among them. For example, the challenge posed by fragmented decision-making applies virtually across all themes.

Adaptation challenges

There is a slow-growing ***acceptance among governments*** (and many other stakeholders) ***of the need to change*** institutions and governance if sustainable mobility goals are to be delivered. The acceptance of this need for transformation varies greatly in different cultural and development contexts, and between countries, cities, as well as different levels of government. There are, however, major deficiencies in the establishment of this capacity for change, and in understanding how to change. The transformation implies embracing a broad definition of 'governance' and managing the demand for movement that favours vulnerable and disadvantaged groups and the environment.[49]

There is a slow-growing acceptance among governments . . . of the need to change institutions and governance if sustainable mobility goals are to be delivered

The ***increased globalization and politicization of the environmental debate*** brings challenges that can have major local manifestations. Where manifestations are negative this generates tensions, which have influenced the thinking of many urban mobility stakeholders, as well as those engaged in urban land-use policy and planning. There are many examples of urban transportation policy documents that express what changes need to occur and how 'smart growth' can propel more sustainable urban mobility planning.[50] The degree to which this has resulted in action, however, has been limited due to the resistance to change within many institutions. Successful implementation of programmes based on more holistic thinking typically requires strong political leadership. Without such leadership, aspirations of more holistic thinking tend to flounder.[51]

There is increasing recognition that the ***integration of land-use and transport planning*** is necessary to ensure the efficiency of urban mobility systems.[52] However, it is important to recognize the commonalities as well as differences between the nature and roles of participants in both fields, as well as the limits to integration possible between the two (Box 9.4).[53] The issue is not so much the difference in perspective, but rather the influence and power that accompanies these perspectives and their ability to affect outcomes. Consultations in land-use developments are more about proposed one-time changes of use, whereas changes to urban mobility tend to take place on a continuous basis. Land-use planning may, as a result, require structural changes in institutional and governance frameworks of a more permanent kind than for urban transportation.[54]

Integration of land-use and transport planning is necessary to ensure the efficiency of urban mobility systems

In developing countries, where urban land ownership and management policy and participatory

Box 9.4 Key challenges in integrated land-use and transport planning

As transportation is a function of land use, one way of effectively reducing urban movement is by imposing tighter land-use controls and increasing densities. There are, however, a number of problems that can prevent this from materializing:

- Many agencies that influence and/or regulate land use have little or no responsibility for mobility policies. The result is a serious institutional 'land-use/transportation disconnect' that prevents integrative actions, especially in cities that have a weak tradition of urban land-use planning and control.
- The skill-sets required by the two principal professions involved are very different and employ very different premises and logic. Obliging these professions to employ more joined-up thinking, as required in transit-orientated development projects, is a good way of achieving this.
- Competitive forces among cities often have one city pitching against another, encouraging 'sweetener deals' to potential major investors in the form of exceptions and leniency in land-use policies and development control.
- Urban growth can prove impervious to local public policies.

Sources: Mitchell and Rapkin, 1954; Dimitriou, 2011; Hajer, 1995; Downs, 1992.

processes are generally less well developed,[55] there is typically a lack of consultation in both urban land-use and mobility planning. There is, nonetheless, an increased understanding of the close links between urban mobility and land-use planning as a result of the land-value impact of transport infrastructure on land use.[56] These circumstances call for a more holistic approach to urban mobility planning, irrespective of cultural and development contexts.

Administrative and governance challenges

Privatization and neoliberal influences . . . have produced more complex institutional decision-making arrangements

As earlier indicated, ***democratization, privatization and decentralization*** have been the three main challenges to the institutional changes occurring in Eastern Europe during the last two decades.[57] The abandonment or gradual dismantling of previous centralized decision-making and planning has transformed the functions of many key transportation infrastructures and services. Meanwhile, the earlier dominance of public transport over private car use has been reversed. This has spawned new urbanization and motorization challenges at a scale not seen before. Similar developments can also be found in some developing countries. This has brought new challenges reflecting changes in the types and influences of stakeholders involved in urban infrastructure developments and provision of transport services. Together with the advance of privatization and neoliberal influences, such developments have produced more complex institutional decision-making arrangements, particularly with regard to transport infrastructure and service investment deliveries associated with private-finance initiatives and public–private partnerships.[58]

The identification of a lead authority to provide strategic direction in decision-making is . . . a pre-requisite of coordinated action

Urban growth generally results in cities spilling over beyond their original administrative boundaries – absorbing neighbouring settlements in a greater metropolitan area. The discussion in the previous section illustrates the ***complications associated with urban administrative boundaries***, when rail- and road-based transport services extend well beyond city boundaries into their hinterland as intercity carriers for passengers and goods. Thus decision-making is not only fragmented as a result overlapping institutional responsibilities; it also faces major challenges in terms of horizontal coordination between lower tier governments and, more significantly, in terms of vertical integration.[59] The identification of a lead authority to provide strategic direction in decision-making is thus a pre-requisite of coordinated action.

Of all challenges confronted by efforts to promote integrated urban land-use and mobility planning, perhaps the most corrosive is a bias against integrated planning and management

Changes in organizational arrangements of agencies are frequently made to address urban mobility challenges. Such changes are particularly made when a new administration comes to power, either at the national or municipal level. These changes, however, have too often acquired a reputation for doing little more than 'moving the boxes around' on an organizational chart and renaming them. This negative perception of organizational reform can be attributed to: a failure to improve organizational culture; a failure in business processes; and a failure in staff skills development. To achieve effective organizational change, all three need to be tackled together.

Of all challenges confronted by efforts to promote integrated urban land-use and mobility planning, perhaps the most corrosive is a ***bias against integrated planning and management***. This bias is encountered within many institutions (both public and private). While it is apparent that joined-up thinking and actions are prerequisites to the successful pursuit of sustainable development outcomes, there is growing evidence to suggest that severe tensions emerge in contexts that also promote neoliberal free market 'solutions' to public domain problems. This is because free-market advocates frequently view integrated planning and management as synonymous to top-down comprehensive planning and management – which restricts innovation and is potentially wasteful due to its non-competitive high transaction costs.

Mobility policy, plan-making, management and regulatory challenges

The ***mainstreaming of the mobility needs of the socially and economically disadvantaged*** is a major challenge, and includes ***gender concerns, as well as the needs of the disabled, the elderly, children and youth***.[60] As noted in Chapter 6, the challenges relate to their dependence on non-motorized movement, their restricted access to motorized public and private transport (especially on grounds of affordability and their capacity restrictions), their vulnerability to traffic accidents, and other safety and security concerns. Addressing these issues requires extensive investigations to better ascertain the nature, distribution and scale of these concerns, to provide a basis for deciding how best to improve the future design, management and delivery of public transport services, including for security enforcement.

The issue of ***how best to plan, manage, operate and regulate urban public transport*** – and the extent this involves enterprise operator functions for building the needed roads or railways or operating buses – is a major international challenge, especially where non-nationalized models of public transport governance exist. Some stakeholders advocate that these enterprises must over time be transformed into self-sustaining businesses operating on commercial lines.[61] Other stakeholders, however, do not consider it desirable (or inevitable) that public transport should always be commercially operated, and look to a more welfare-orientated approach instead.[62]

In addition to the kinds of formal urban public transport systems referred to above, informal public transport services ply the roads of many (if not most) cities of developing countries. While some urban institutional arrangements show some accommodation toward informal sector operators, the culture of city officials throughout developing countries is typically dismissive of informal modes of mobility. This is despite the widespread prevalence of poverty in cities with a large majority of inhabitants for whom these modes of travel are vital.[63]

Freight movement is critical to the economies of all cities. There is thus an ongoing call for increased private investments to ***address the needs of freight movement***, in terms of infrastructure and operations. Although significant world-wide, such investment is particularly important for cities with major ports and/or airline hubs in developing countries and countries with economies in transition, where globalization has opened up many new opportunities. Private investment in freight movement has seen major developments in information and communications technologies, which in turn have spawned dramatic changes to logistic services in the continued search to reduce costs.

A major challenge to freight movement in metropolitan areas of developing countries has to do with the location of logistics facilities, and the unpredictability of changes to land uses resulting from the absence of land-use zoning protection of existing logistic centres. This has led many freight companies to move their logistic facilities to the periphery, where land is cheaper and more freely available.[64] Such developments have contributed to a growing 'logistics sprawl' of freight logistic and distribution centres.

Challenges of multi-modal integration are numerous and varied in urban areas globally. They are exceedingly important with respect to provision of efficient public transport and freight movement. A common challenge for urban institutions is the integration of the planning, management and operation of railways with road-based public transport services and other traffic. A larger challenge for fast-growing cities in developing countries is the more urgent task of facilitating convenient rail-road interchanges for peak commuter journeys and ensuring integration of fares.

Inter-agency collaboration among the organizations responsible for the planning, management and operation of various urban modes of transport – and the city planning organizations responsible for land developments – is also essential. Establishing such collaboration is among the most fundamental challenges for municipal and government authorities, especially where silo-thinking too often prevails.

There is a clear need to ***mainstream environmental concerns***[65] in institutional and governance frameworks for urban mobility.[66] Transport and non-transport engineering and environmental departments tend to compete over resources, funding and for pre-eminence within governance structures. While the mainstreaming of transport disciplines is a useful premise within organizational restructuring, the transport department is often part of a bigger engineering or environmental department that has other priorities to balance. In practice, transport is often given greater importance where there are particular pressures on the availability or value of land that constrain the distribution of people and jobs/goods/services.

Inter-agency collaboration among the organizations responsible for the planning, management and operation of various urban modes of transport . . . is . . . essential

Resourcing and capacity-building challenges

Perhaps the most pervasive challenge for urban transport institutions globally is the ***lack of sustained funding for transportation infrastructure and services*** – not least for the institutional infrastructure. Combined with a poor understanding of urban economics and the complex interplay between infrastructure investment, land-use planning and the value that the 'public good' of efficient mobility can provide, these challenges together can pose 'wicked problems'.[67] As noted in Chapter 8, cities can be self-financing in transportation and other essential infrastructure if economic rent from land value-added through investment in infrastructure is captured by the city and 'recycled'.[68] However, few cities come close to practising the theory. As a result, cities are forced to develop plans for public transport improvements that depend overwhelmingly on the fare box to finance fixed assets.

Perhaps the most pervasive challenge for urban transport institutions globally is the lack of sustained funding for transportation infrastructure and services

The ***development of information and communications technologies***[69] can enhance the performance of the urban transportation sector. The fast-changing world of such technologies offers numerous possibilities – primarily through the internet and mobile communication – to help address the current lack of sustained funding for urban transportation infrastructure and services (Box 9.5). These tools, however, are too often poorly understood and/or present numerous technological and funding challenges (especially initially) to many conventional civic institutions, particularly in developing countries.

This remains an important challenge as the opportunity costs of not employing such tools mount. In recognition of the potential for urban transport institutions of information and communications technologies, the United Nations has sought to promote tools that can monitor urban land and infrastructure developments (including land values) so as to enhance the ability of government decision-makers to better plan, manage and finance future urban development as part of online capacity-building efforts.[70]

Institutional capacity-building and training of staff in the urban transport sector are always critical, regardless of the level of development

Box 9.5 The potential of social media and open source material

The evolving frontier of web 2.0, social media, open source material and volunteered geographic information needs to be considered, addressed and potentially embraced with respect to the development of urban mobility systems. Until relatively recently, the public sector, the private sector, or a partnership between the two, were responsible for planning, design, implementation and operation of urban mobility systems, with civil society actors being consulted at times as a routine part of the process of planning or implementation. Engineers, planners, bankers, architects and urban designers were the 'professionals' whose expertise informed transportation efforts.

Today, however, civil society groups and individuals are vocal advocates for, and increasingly consider themselves to be 'experts' in, sustainable mobility efforts. While geospatial mobility and logistics data are largely proprietary in nature, civil society groups and individuals request and sometimes demand access to government-owned data sets. Furthermore, crowd-sourced and/or volunteered geographic information data sets are now emerging as open source alternatives to proprietary and private data, and are increasingly seen as having the potential to enhance the sustainability of urban mobility systems.

Open source material is currently being used for non-motorized vehicle mobility planning in many cities around the world to expand infrastructure for walking and cycling and to improve the conditions and connectivity of existing networks. Furthermore, groups such as 'seeclickfix.com' crowd-source tips on problems that need fixing in communities (including mobility-related issues) and then direct feedback and comments to local governments or agencies with the power to fix these problems. Likewise, mobile applications such as 'Moovit' help riders make public-transport system-access decisions based on crowd-sourced data about system effectiveness, efficiency and temporary problems that might cause delays or disruptions. Moreover, the World Bank, in partnership with federal and local transportation agencies in the Philippines, is piloting an open data system of public transport routes, schedules and fares.

Source: Personal communication with Professor Pamela Robinson, Ryerson University, Canada. See also http://seeclickfix.com/; www.moovitapp.com/; http://blogs.worldbank.org/transport/open-data-urban-transport, last accessed 1 March 2013.

Institutional capacity-building and training of staff in the urban transport sector are always critical, regardless of the level of development and the gender of trainee.[71] These efforts are frequently required for pilots of new planning and management processes, so that teething troubles and difficulties can be resolved before moving to their widespread introduction.

Institutional capacity-building typically seeks to address issues raised at the local level. In so doing, it frequently includes: the training of local professional and technical staff, as well as political leaders; facilitating political–professional dialogue; enhancing communications of the public sector with the private sector; and improving government dialogue with local communities and the non-government sector.

Cities in developing countries and countries with economies in transitions have additional capacity concerns – related to a backlog of long-term and structural institutional-capacity shortages.[72] It should be noted that many deprived cities in developed countries as well are in need of such attention. Both contexts confront institutional capacity-building challenges with regard to the introduction of new approaches and tools, many of which are increasingly based on information and communications technologies. They are also confronted with challenges associated with the introduction of a more holistic understanding of transport and urban development, as in the case of efforts to operationalize the sustainability vision in the urban transport sector.

When training and capacity-building are provided as part of foreign aid technical assistance, participants are frequently not up to the required level to receive the course, nor are they originally trained/educated to work in the field of their employment

At the international level, enhanced global information and communications technologies now facilitate knowledge-sharing and lesson-learning not only from developed to developing countries, but also between developing countries.[73] The challenge here is in making judgements about the appropriateness of the knowledge acquired/shared from an overseas source to one's own developmental circumstances and aspirations.

However, it should be noted that when training and capacity-building are provided as part of foreign aid technical assistance, participants are frequently not up to the required level to receive the course, nor are they originally trained/educated to work in the field of their employment. Furthermore, in many instances, particularly in developing countries, it is the wrong individuals that are being trained. The ones invited for training courses are not the ones that are actually doing the work; and in some cases (particularly when funded by overseas agencies), attendance on training courses is seen as a fringe benefit and a means to access travel, extra allowances, etc. Moreover, course organizers are frequently not aware of the realities of the working environments of the trainees and the training course is often inadequately designed to meet the real needs of the participants.[74]

POLICY RESPONSES AND INNOVATIVE AND 'SUCCESSFUL' PRACTICES

This section presents a selection of innovative and successful institutional and governance responses to many of the challenges discussed in the previous section. It should be stressed, however, that each example cited does not necessarily incorporate all facets of good practice, more likely only selected dimensions.

Integrated urban land-use and mobility planning

It is often argued that integration – in terms of land-use and transport planning and/or intermodal integration – can only be achieved if the agencies responsible are themselves integrated into one agency. However, in the case of Singapore, the mechanism of cross-agency committees is used instead. This has been successful as 'the Singapore Government as a whole is relatively integrated, with less of the departmental silos culture frequently seen in other national and city governments' in the region.[75] The integration is also achieved by virtue of a large percentage of its land being in government ownership. This permits the Singapore government to 'use land release strategically as a proactive means to guide the implementation of [its] Concept and Land Use Plans' and for any other uses deemed to be in the public benefit.[76] These arrangements facilitate the acquisition of land around metro stations before construction. Singapore's metro system has attracted 70 per cent of trips of all motorized modes within 25 years of its inauguration in 1987. This represents a major achievement that has been largely attributed to its effective institutional and governance arrangements.[77]

The integration of urban land-use and mobility planning functions is also well reflected in other countries. In the city of Seoul (Republic of Korea) for example, the institutional structure for land use and transport is directed by the mayor, with transportation responsibilities overseen by a vice mayor (who heads the City Transportation Headquarters) and land-use planning overseen by another vice mayor (who heads the Urban Planning Bureau). The mayor has an additional third arm of governance (the Management and Planning Office) that oversees and looks to manage and plan the integrative aspects of both.[78] In Japan, the national and regional institutional structure is especially conducive to the development of rail-orientated urban development.[79] This falls under the overall responsibility of the Ministry of Infrastructure, Transport and Tourism, which includes five departments responsible for urban transport, including the Railway Bureau.[80]

In Canada, the regional governance models that facilitated the set-up of the TransLink in Vancouver;[81] the transportation arms of the Capital Region Board in Edmonton;[82] and Metrolinx for the Greater Toronto and Hamilton Area[83] have been applauded. All of these authorities 'encourage region-wide coordination of land-use and transportation planning and decision-making'.[84] This includes attempts to coordinate and integrate different modes of transport.[85]

The city of Nantes in France is at the forefront of sustainable mobility planning

The city of Nantes in France is at the forefront of sustainable mobility planning. This is largely due to its long-term vision and commitment to an integrated approach to urban planning and transport over some 30 years (Box 9.6).[86] Nantes' approach to provide an integrated network of multi-modal transport services has, to some extent, helped the city manage the growth of private car use, simultaneously retaining a high level of mobility for its citizens and preserving their quality of life. The city is also a good example of how an employer tax on public transport provision (*versement transport*) has been widely employed across France.[87] The city has furthermore been a pioneer in drawing up urban mobility plans.[88] The latest of these (2010–2020) 'sets out transport policy for the next ten years and thematic action plans are elaborated on topics such as public transport,

Box 9.6 Main causes for the sustainable mobility planning achievements of Nantes, France

The achievements are attributed to the city administration's:

- ***long-term city-wide vision*** and strategy;
- ***competence across required areas*** to enable integration of decisions and actions to implement (i.e. pricing and availability of parking, integrated ticketing, infrastructure, etc.);
- ***ability to build consensus*** with surrounding municipalities, gain political support and implement integrated policies and plans, gaining the advantages of a wide service area;
- ***capability to make intelligent choices*** regarding: the integration of modes and the use of a wider set of mobility possibilities over and above the car, including bike-sharing, car-pooling and walking options (such as pedestrian-only zones);
- ***sustained investment*** in quality infrastructure and vehicles, thus providing attractive alternatives to private car use;
- ***provision of a high-quality public transport service*** at an affordable price.

Source: Allen, 2011b, pp15–17.

non-motorized transport . . . parking, traffic and road safety and inter- and multimodality aspects'.[89]

Privatization, decentralization and centralization

Greater awareness of the rights of urban residents can positively influence the governance structures of urban transportation

In Chile, and in some other South American countries, there is evidence that greater awareness of the rights of urban residents can positively influence the governance structures of urban transportation. Citizen participation has played a role (to varying degrees) in a number of major urban public transport developments in the region, including the TransMilenio (Box 7.7 and Box 9.12) and Transantiago projects. The characteristics of the innovative institutional framework established for the latter are outlined in Box 9.7. Notwithstanding the innovative ideas behind this initiative, however, it has been argued that the resultant institutional architecture has become weak and predominantly reactive rather than proactive, with decisions taken mainly by central government. This has partly been explained by the fact that there is no mayor with jurisdiction over all districts of the city and that Transantiago staff are not public officials, and mainly work on short-term contracts with no clear individual responsibilities.[90]

The institutional and governance framework for urban transport in Barcelona, Spain, is innovative in that it allows a mix of public and private public transport operators to operate in the metropolitan area. Apart from cities in Scandinavia, Barcelona is one of the few cities in Europe where public and private operators coexist within the same jurisdiction. Such 'mixed systems' are believed to be capable of increasing competition in the local market, providing better information on costs, and ensuring that governments can guarantee a fail-safe service or reverse its privatization decision if contracts fail. Under these arrangements, Barcelona has made it possible to outsource bus services in certain municipalities, even though the transportation authorities in the centre of Barcelona have chosen to retain delivery of their services. The main shortcoming of this model, however, is that the public transport provider (Transports Metropolitans de Barcelona) retains a great deal of autonomy from the regulator (Metropolitan Entity of Transport), which makes it difficult to regulate the former.[91]

Barcelona is also providing a good example of how to enhance public participation, with its 'mobility pact' between the main stakeholders in the transport sector (Box 9.8). This initiative has since been copied in a number of other cities. Barcelona's mobility pact encourages participation by all actors in the field of urban mobility in Barcelona, and related activities are canalized in both formal and informal ways. Several newspapers do for example publish daily columns on mobility-related problems in the section on 'letters from our readers', often with a photo, with an opportunity for the responsible institution(s) to respond.

The city of Amman, Jordan, provides an example of a successful decentralized model of institutional development and governance for the urban transport sector, due to its multi-stakeholder structure.[92] The Greater Amman Municipality is responsible for policies and transportation system stewardship. At the national level, the Ministry of Transport is responsible for all intermediate and long-term plans and studies, while the Public Transport Regulatory Commission is responsible for public transportation. This Commission is affiliated with the Ministry of

Box 9.7 Institutional framework for urban mobility in Santiago de Chile

This institutional framework for Santiago de Chile has the following characteristics:

- Profound political, economic and regulatory changes (particularly in terms of ***liberalization and privatization***) in national governance that have taken place since the 1970s have greatly limited the role of government in urban services provision.
- A wide-ranging approach to the improvement of public transportation has included ***new regulations for the bus system*** with respect to, among other things, its levels of service.
- An extensive construction programme of urban and suburban highways has been delivered via ***public–private partnerships***.
- The city-wide *Transantiago* programme introduced a ***bus rapid transport*** system that has become a centrepiece of integrating the city's overall public transport system.
- Although there has been strong technical and institutional ***capacity-building*** within the involved organizations, the accumulated experience has unfortunately not resulted in entirely successful implementation. This is primarily attributed to limitations within the institutions involved and issues of governance relating to, among other things, the integration of land-use and urban transport developments.
- There is an almost total compartmentalization between organizations in the city, leading to ***problems of coordination***. This has limited the institutional capacity for integrated management in urban transport and land use. It has also encouraged a tendency toward 'reactive management' providing a context where decisions are predominantly taken by a national authority.

Source: Figueroa and Rodriguez, 2011.

Box 9.8 Social participation in decision-making: The 'mobility pact' in Barcelona, Spain

In 1998, the City of Barcelona defined a 'mobility pact' among its 62 mobility-related stakeholders (i.e. users, operators, manufacturers, providers, etc.). What started as media-oriented performance and a 'politically correct' initiative has turned out to be a great tool to reach agreements and consensus about priorities for how to use the city's limited street space. The initiative involves thematic meetings, two annual general meetings (with the presence of the mayor) and follow-up of key performance indicators.

The 'ten commandments' of the mobility pact are:

1. High-quality, integrated public transport.
2. Maintain traffic speeds and improve the speed of surface public transport.
3. Increase the surface area and quality for pedestrian use.
4. Increase the number of parking spaces and improve their quality.
5. Improve citizens' information and road signals and signs.
6. Legal regulations to be suited to the mobility of the city of Barcelona.
7. Improve road safety and respect among users of various transport modes.
8. Less polluting fuels, and reduce air and noise pollution caused by traffic.
9. Promote the use of bicycles.
10. Efficient and orderly distribution of goods and products throughout the city.

Sources: Ajuntament de Barcelona (not dated); and personal communication with Professor Francesc Robusté, Centre for Innovation in Transport (CENIT) and Technical University of Catalonia.

Box 9.9 Institutional developments for urban mobility in Hanoi, Viet Nam

The positive aspects of institutional development and governance in Hanoi include:

- ***The creation of a single local government area*** by the extension of the administrative boundary to create a 'Greater Hanoi', which includes all areas likely to undergo urbanization up to 2050.
- ***The establishment of a Department of Transport*** by bringing together most functions of urban transport within Greater Hanoi in a single agency.
- ***The introduction of strategic planning***, thus reflecting the decision of the central government to decentralize responsibility for the preparation of construction master plans for Hanoi.
- ***The intention to establish a public transport authority*** to be responsible for all aspects of public transport in Hanoi, and to undertake studies to clarify the roles and responsibilities of this authority.

However, a number of issues still remain to be addressed, including:

- adopting enabling legislation for decentralization;
- undertaking institutional development of the Department of Transport;
- providing resources for training and capacity building in the transport sector;
- establishing a more integrated sector-wide approach to meet the challenges facing transport institutions.

Source: Phin and Dotson, 2011, pp14–15.

Transport but has its own financial and administrative independence.[93]

In contrast, a centralized model of institutional development and governance for urban transport is showing promise in Viet Nam. A relatively simple line of authority between national and local government has helped the establishment of strong city-wide transport authorities of the kind recently proposed for Hanoi (Box 9.9). The city offers good illustrations of progress toward good practice (albeit slowly) in institutional development and governance in urban transport policy-making, land-use/transport strategic planning and in public transport planning and management.

Addressing urban boundary complications

As noted earlier in this chapter, Auckland, New Zealand, has recently seen the implementation of a far-reaching reorganization of its governing structure. As a result, a new council-controlled organization, Auckland Transport, was established in November 2010, working under the new amalgamated Auckland Council. The new organization combines the expertise and functions of eight former local and regional councils and a regional transport authority (ARTA). All transport functions and operations in Auckland are now the responsibility of one organization.[94] The establishment of Auckland Transport assumes that 'the Long-Term Council Community Plan and District Plan will continue to guide Auckland Council

A centralized model of institutional development and governance for urban transport is showing promise in Viet Nam

decision-making, pending decisions on a spatial plan and infrastructure investment plan.' These new arrangements anticipate that 'local boards will have an advisory role in identifying local service needs and a budget for planning and 'place-shaping'.[95]

The decision that the local authority transport network for Auckland is best managed as a single network by Auckland Transport was premised on the belief that it will provide a level of focus that could not be provided by the full Auckland Council with its multiplicity of responsibilities. The governance framework allocates the main transport roles to Auckland Transport with Auckland Council being responsible for its long-term council community plan. This establishes council transport funding for the Auckland Transport, while the Auckland regional land transport strategy sets out the transport outcomes that the region wishes to achieve over a 30-year period. Under these arrangements, Auckland Transport is responsible for planning and delivering local 'roads and footpaths . . . parking and train, bus and ferry services',[96] including the preparation of the Auckland regional land transport programme, which sets out the transport projects anticipated over the next three years.

Continued urban growth in Stockholm, Sweden, has provided the impetus for the formation of a single regional transport body, *Storstockholms Lokaltrafik* in 1967. This agency assumed the public transport responsibilities that had been previously distributed among individual municipalities. The integration of services and tariffs was a primary goal of this institution – with bus, metro, regional rail, and ferry services all procured for the city by *Storstockholms Lokaltrafik*. Owned by the Stockholm City Council, *Storstockholms Lokaltrafik* is the parent company for four operating companies, two dormant subsidiaries and six associated companies. The organization's activities include providing:[97]

- an operational 'overview' of the region's public transport system and services;
- an overall service quality of the region's public transport system and simultaneously being responsible for the supervision of maintenance;
- initiatives for the development of the system;
- services for the purchases and procurements of the region's public transport system.

Mobility policy, plan-making and management

The State of Victoria, Australia, offers a good example of promoting institutional system integration and sustainability for urban mobility through its recent legislative reforms spawned by the State of Victoria Transport Integration Act of 2010.[98] Whereas Victoria's urban transport governance was in the past dispersed among different parties with differing objectives and interests, preventing the recognition of the interconnected nature of transport and land use, the Act provided a common state policy framework. This framework seeks to:

- unify all elements of the transport portfolio to ensure that transport agencies work together towards an integrated and sustainable transport system;
- recognize that the transport system needs to be sustainable in both economic, social and environmental terms;
- enable the transport system to be conceived and planned as a single system rather than as separate or competing transport modes;
- provide a universal framework for integrated and sustainable transport policy and operations;
- integrate land-use and transport planning and decision-making by extending the coverage of the Act to land-use agencies whose decisions are likely to have a significant impact on the transport system;
- align the charters of transport agencies with the overarching policy framework to increase the modal share of public transport.

Box 9.10 Climate change activity at the state level, US

State climate action plans: As of April 2010, 33 US states had developed state climate action plans, with several others in the process of doing so. Some have been formally adopted by the respective governor or state legislature; others were prepared as reports without any official action being taken. Many state departments of transport have developed strategies or policies for implementing the transportation elements of these plans. Yet others are taking a range of additional actions to reduce greenhouse gas emissions.

Local government climate activities: Nearly 800 mayors have signed the US Conference of Mayors Climate Protection Agreement, agreeing to reduce greenhouse gas emissions to at least 7 per cent below 1990 levels by 2012.

Climate planning by metropolitan planning organizations: Many metropolitan planning organizations, especially larger ones, are analysing greenhouse gas emissions from transportation in their metropolitan areas, developing transportation greenhouse gas inventories and baseline protections, as well as identifying possible strategies to reduce greenhouse gas emissions from transport.

Source: AASHTO, 2012.

Mainstreaming environmental concerns

Although the Federal Government of US has not enacted climate change legislation, there is a great deal of climate change activity at the level of the states. These reveal significant advances being made that perhaps defy the international impression of the US federal government's negative attitudes to the climate change agenda (Box 9.10).

In the UK, London 'considers itself an exemplar in moving towards a low carbon economy'. It views sustainability 'primarily as an environmental quality with reductions in [carbon dioxide] and local pollutants being the major objectives'.[99] In order to reduce its greenhouse gas emissions, London has focused on 'investment in higher density developments and the use of transport development areas at key interchanges that are public transport accessible. It is now considering alternative fuels and has taken the lead in investing in an electric vehicle infrastructure, in cycle hire schemes and in cycle highways'.[100] Major infrastructure investment is seen as a significant part of the Mayor's 2010 Transport Strategy, in order to enhance the capacity and connectivity of the capital's public transport system following a history of underinvestment.[101]

Mainstreaming mobility needs of the socially and economically disadvantaged

The EU's plans to introduce a framework for the preparation of urban mobility plans are among the most innovative measures to promote institutional development and governance within the urban transport sector. This represents a major pan-European effort at promoting walking, cycling and public transport in urban areas. The European Commission recommends:[102]

- the establishment of procedures and financial-support mechanisms at the European level for preparing urban mobility audits and urban mobility plans;
- the examination of the possibility of a mandatory approach to such plans for cities of a certain size;
- the linking of EU regional development and cohesion funds to cities and regions that have submitted a current, and independently validated 'urban mobility performance and sustainability audit' certificate;
- the examination of the possibility of a European support framework for a progressive implementation of urban mobility plans.

South Africa's efforts to promote urban mobility plans since 1999 do in some respects reflect these developments in Europe.[103] The 'Moving South Africa' Project attempted to develop a strategic framework for transport in the country. It called for transparent decision-making, funding and pricing for the transport sector and looked to the reorientation of transport towards customer needs. The government's role was to provide a clear vision, the establishment of strong institutions, the setting of clear rules for reinforcing the vision, the development of human capacity, and the measuring and monitoring of performance. The project considered customers of the South African (urban) 'transport system to be disempowered and weakly organized'. It also considers 'the upgrading of customer power [as] a precondition for improvement to the transport system'.[104]

EU's plans to introduce a framework for the preparation of urban mobility plans are among the most innovative measures to promote institutional development and governance within the urban transport sector

Another innovative international measure that has the potential to impact urban transport institutional development and governance is initiatives to increase the engagement of youth. With this in mind, the Youth for Public Transport Group was set up as part of UITP's Youth Project.[105] 'The group was formed to recognize innovative public transport projects that include youth and to start a dialogue between youth groups and government through more formal mechanisms so that young voices can be heard'.[106] Yet, another initiative in this area is the Tanzanian initiative to introduce a regulatory framework and a Consumer Consultative Council to represent the interests of all public transport users (including the disabled).[107] Hong Kong, China, is already undertaking a systematic monitoring and enforcement, against very clear requirements and goals with respect to the mobility rights of the disabled.[108]

Addressing freight movement needs

The city of Paris has employed an explicit transport policy for freight since the early 2000s, and has promoted a Charter for freight movement (Box 9.11). Notwithstanding some disappointments, 'Paris can be considered one of the most active European cities in the field of urban freight management'.[109] Some 'two-thirds of shipments coming in and going out of the metropolitan area of Ile-de-France go through a regional terminal in order to be transhipped and reorganised',[110] demonstrating the strategic role of logistics terminals in large metropolitan areas.

Hong Kong, China, is already undertaking a systematic monitoring and enforcement, against very clear requirements and goals with respect to the mobility rights of the disabled

The 'National Programme for Freight in Cities' established by the French Ministry of Transport in 1993 carried out surveys of freight movement in France and established a database for urban freight demand in the entire country. Based on this information it built a simulation model of future movements. A second phase of the surveys started in 2010. The surveys revealed the characteristics of 'logistics sprawl' and that freight transport generates a large proportion of local transport-based pollution in Ile-de-France. As a result, in 2011 the city of Paris was designated as one of six 'zones for priority' to address air pollution produced by commercial vehicles, targeting especially the restriction of access by old commercial vehicles.[111]

Box 9.11 The Freight Charter, Paris, France

Since 2001, urban goods transport, long neglected in Paris' mobility policies, has been brought to the municipal agenda as part of a new approach in transport planning, with the main aim of alleviating the negative environmental impacts of freight movement.

In 2002 a consultation brought together the deputy mayor with the various freight transport stakeholders – as well as rail operators, energy providers and other public agencies – with a view to informing each other of their respective challenges and priorities. In 2006, as a result of these consultations, a Freight Charter was signed by all parties. While not a legally binding document, it identified commitments made. The most salient of the conclusions of this charter were that it:

- declared that consultation helped defuse conflicts before they break out, between parties that (previously) usually never met;
- introduced enforcement of truck access and delivery regulations;
- highlighted the land scarcity for logistic activities, especially in the inner suburbs;
- suggested that experimenting with new forms of city logistics organizations is an effective way of spreading new ideas:
- concluded that the relevant jurisdiction for policies is regional rather than local given that freight flows traverse all local boundaries.

Source: Dablanc, 2011, pp8–10.

Box 9.12 Land-use and transport planning, Bogotá, Colombia

Colombia carried out an ambitious ***decentralization*** process in the mid-1980s, whereby mayors and governors previously chosen by the president of the republic have since been elected by universal suffrage and have become the authority in charge of the principal economic, social and environmental developments of their territory. These developments were facilitated by legislation introduced in the early 1990s that, in the case of Bogotá, provided for a new organization to be set up (the Distrito Capital) giving more autonomy to the executive power (the mayor) and contributing to a better fiscal organization. The 'Territory Development Law', introduced in 1991, sought to harmonize former legislation, instructing every municipality and district in Colombia to autonomously develop long-term plans.

In Bogotá, the mayor of the Distrito Capital was given wide responsibilities in policy and planning, and in the development of projects in land use, transportation, health, environment, education, public services as well as other relevant domains, on the understanding they were consistent with legal frameworks defined at a national level.

Enrique Peñalosa (who was mayor 1998–2001) oversaw the development of the TransMilenio BRT system, which commenced operations in 2000 (Box 7.7). Following its success, mobility plans were prepared for Bogotá and its region in 2006. These built on many of the ideas and visions of the TransMilenio, and ensured complementarity and consistency with the overall land-use plan.

Sources: Bocarejo and Tafur, 2011; EcoPlan, 2000.

The formal institutional link between TransMilenio and Bogotá's municipal authorities means that the influence of citizens (as users of transport) is strong

Public transport planning and service delivery

The TransMilenio system provides mass public transport services – in the form of a BRT system – for the city of Bogotá, Colombia. It not only provides strategies to improve public transport but also seeks to recuperate public space, discourage the use of cars and encourage cycling (Box 7.7). Devolving power from national to newly created city governments with directly elected city mayors was an important precondition for TransMilenio (Box 9.12). A 1998 law created a public entity with a mandate to manage, plan and control passenger urban transport services in the metropolitan area of Bogotá.[112] By this law, the state builds and maintains the infrastructure, while private companies acquire and operate the fleets of buses and other public transport vehicles. TransMilenio itself has no contracts with these operating companies. Instead, the municipal authority places the contracts and TransMilenio provides the management service for infrastructure (including cycle paths) and transport operations. The formal institutional link between TransMilenio and Bogotá's municipal authorities means that the influence of citizens (as users of transport) is strong. The result is that there is 'political leadership and authority to make the appropriate decisions necessary to implement the transport system'.[113]

Numerous institutional arrangements have also recently been set up in India to deliver and operate BRT systems, including in Ahmedabad where Ahmedabad Janmarg Ltd. was constituted to run/operate the system. While the Ahmedabad Municipal Corporation remains the chief executing authority of the system, the 'use of local expertise in lieu of international consultants not only ensured responsiveness to local conditions and technology transfer, but was also effective in keeping cost low'.[114] With state and national level support provided through a steering committee under the State Urban Development and Urban Housing Ministry, together with

financial and other incentives at the national level, this strong political commitment across several levels of government was instrumental to the implementation of the project.

As in the case of the Janmarg BRT, the Delhi metro was financed from multi-tiered funds and planned as an integral part of a larger multi-modal transport system. It similarly enjoyed widespread political support in central government, even though the larger scale of the Delhi project presented greater challenges. What is most significant about the institutional arrangements for this project is that it is being promoted as a viable public transport model for other South Asian cities.[115]

The rail-oriented urban development strategy employed throughout Japan is also interesting. This is supported by national and city governments, promoted by influential private rail companies and reinforced by the country's government. The rail companies are part of large Japanese commercial and industrial consortia that also have real estate and retailing interests, as well as construction and banking interests. These seek to take advantage of land developments around stations so as to ensure maximum use of their rail networks. They do this by acquiring large areas of land along proposed rail extensions prior to any development. Japan's rail-orientated development strategy has especially benefited from the country's land readjustment programme. Here irregular patterns of agricultural land holdings were in the past rearranged into regular building plots and equipped with basic urban infrastructure, with a small percentage of each landowner's holding providing land for roads and parks to cover the costs of the project.[116]

Throughout the US, the perception of urban public transport is largely poor. The improvement of the image and performance of this mode of travel thus has major governance dimensions. In response to this, new investments have been made in light rail and BRT, especially in some of the smaller but rapidly growing cities, such Portland, Oregon and Salt Lake City, Utah. In the case of Portland (Box 9.13), governance of land use and transport policy have been employed as twin pillars for the creation of additional capacity and as a stimulus for growth.

Multi-modal integration

Japan's rail-orientated development strategy has . . . benefited from the country's land readjustment programme

The city of Stockholm and its surrounding region are regarded as having one of Europe's best public transport systems. Together they are renowned for their progressive approaches to integrated urban land use and transport planning, and multi-modal integration, with its public transport services being of special interest to those concerned about sustainable urban mobility.[117] The current development plan for the Stockholm region foresees a polycentric structure of seven new 'cores' for urban growth, with public transport recognized as key to meeting the increased mobility demands spawned by these new growth centres (Figure 5.16).[118] It is envisaged that these cores will eventually function as independent multi-modal urban transport hubs that will enhance the overall efficiency of the utilization of transportation and land use within the region.

There are . . . some encouraging developments in some African cities where metropolitan transport authorities have recently been established to integrate the governance of disparate modes

To enhance multi-modal integration of passenger services, in August 2012 *Storstockholms Lokaltrafik* appointed Deutsche Bahn Arriva to provide a new regional transport service that involves planning and operating an integrated and complex system of ***bus and rail***. This is the largest multi-modal transport contract of its kind in Sweden, and after implementation of the second phase of the contract[119] it is estimated that these services will carry some 94 million passengers per year.[120]

There are also some encouraging developments in some African cities where metropolitan transport authorities have recently been established to integrate the governance of disparate modes. An example is the establishment (in 2002) of the Metropolitan Area Transport Authority in Lagos

Box 9.13 Institutional and governance framework in support of light rail in Portland, Oregon, US

Strategy to improve public transport: As part of a broader strategy for Portland, a light rail system – comprised of 38 closely spaced stations – has increased walking trips and reduced the demand for parking.

Revenue earning system to finance the project: To help finance the project, city parking charges were increased, and the city issued bonds backed by future parking revenues predicted to raise US$28.5 million. Property owners along the line also agreed to form a 'local improvement district' that looked to generate a further US$10 million, while a tax increment and mix of other sources generated another US$11 million.

Accompanying urban revitalization strategy: The Portland Development Council was set up to stimulate the private market by investing – prior to the project – in new housing, commercial opportunities and open space in locations near the light rail stations. This permitted the city to leverage public improvements necessary to support a more balanced, higher density development that in turn generated a significant stream of tax revenue.

Source: Ong et al, 2010, pp97–98.

Box 9.14 The Lagos Metropolitan Area Transport Authority (LAMATA), Nigeria

The LAMATA project, funded by US$100 million of World Bank credit in 2002, involves re-regulation of the informal sector, and using road rehabilitation as a lever and an instrument to reduce poverty through employment on road works.

Public transport service franchises have been introduced on roads improved by the project while other (non-franchise) operators are prohibited from using these roads.

On the institutional side, the project has helped to create a regulatory authority (LAMATA), with a financial capacity through a new Transport Fund. The fund is fed by budget transfers from the Lagos state government, and a share of road user charges.

No provision has been made to seek street space exclusivity for public transport vehicles, reflecting a sober assessment of what was 'politically feasible'.

The project design is unusual in that investments in one mode (road infrastructure) are used to leverage regulatory changes for another mode (public transport services). This was possible because the client government (Lagos state) has jurisdiction over both modal systems.

Source: Mitric, 2008, p50.

(Nigeria) (Box 9.14), and (in 1997) the Executive Council of Urban Transport in Dakar (Senegal) (Box 9.1).[121] In Abidjan (Côte d'Ivoire), in 2002, a state board (AGETU) was established for the management and coordination of public transport, with the management of the minibuses and taxi licences among its principal tasks. This organization has, unfortunately, from the outset been hampered by its conflict with the municipalities of Abidjan who have been reluctant to transfer the funds obtained from the fees and taxes levied on shared taxis.[122]

Other cities have also made – or are in the process of proposing – important changes to their public transport and mobility systems. The municipality of Montevideo, Uruguay, has since 2005 sought to transform its public transport, freight and commercial developments to offer greater connectivity to ports, airports and rail termini, simultaneously emphasizing the importance of non-motorized movement.[123] Similarly, the city authority of Rosario, Argentina, has after a ten year experience in strategic planning decided to strategically invest in pedestrian access to public transport services and cycle routes. It has also imposed tight parking controls. This demonstrates how small cities can function in the broader territorial context.[124]

Sustainable funding

Hong Kong . . . is widely considered to have a successfully organized and sustained funding of its urban transport system

Like Singapore, Hong Kong (China) is widely considered to have a successfully organized and sustained funding of its urban transport system. The ingredients of Hong Kong's success can be attributed to its progressive transport policies maintained over the last 30 years; its 'effective regulatory and co-ordination mechanisms that subjugated all agencies and transport operators to basic policy objectives', and financial discipline maintained by all undertakings, both privately owned or run on commercial lines.[125] As noted in Chapter 8, Hong Kong's metro projects have always been self-financing, due to its successful policy of value capture, made possible thorough a full integration of land-use and transportation planning. The income generated by the MTRC from its highly profitable rail-orientated property development, together with its fare-box revenues from the very high patronage levels its services enjoy, makes MTRC one of the few profitable railway companies in the world.[126]

Mainland China has retained state ownership of land, which has enabled its urban public authorities – as in the case of Hong Kong and Singapore – to capture far more of the land-value increases associated with transportation and other urban infrastructure investments than in most cities elsewhere. The adoption of land leases in China (generally of 70 years) for urban transport-related mixed-use developments offers huge scope and potential for similar financial rewards for the public sector. However, in some cases such rewards are not materializing at the scale expected. It has been suggested that this is due to the excessively close links that have developed between some city mayors and leading entrepreneurs, involving non-transparent transactions and conflicts of interests.[127]

In the face of . . . infrastructure investment challenges, some national governments . . . have established national agencies specifically assigned responsibilities for the planning, appraisal and funding of critical infrastructure

The mayoral supervision responsibilities provide the mayor in Greater London (UK) with the mandate and power to rapidly design and implement congestion charging, which has both improved the mobility into and through central London, and proved popular at the same time.[128] Furthermore, in March 2012, the mayor was given the power[129] to raise money for infrastructure projects through the introduction of the community infrastructure levy. These revenues will be charged on most developments in London at differential rates depending on zones, ranging from £20 to £50 per square metre.[130] Despite these initiatives, however, the investment demands look set to remain challenging due to a backlog of infrastructure investment over the last 50 years.

In the face of such infrastructure investment challenges, some national governments (principally in developed countries) have established national agencies specifically assigned responsibilities for

Box 9.15 Functions of 'Infrastructure Australia'

Infrastructure Australia is a statutory body, established under the Infrastructure Australia Act of 2008. It advises governments, investors and infrastructure owners on a wide range of issues that include:

- Australia's current and future infrastructure needs;
- Mechanisms for financing infrastructure investments;
- Policy, pricing and regulation and their impacts on investment and on the efficiency of the delivery, operation and use of national infrastructure networks.

Infrastructure Australia's focus is on assisting Australian governments to develop a strategic blueprint for unlocking infrastructure bottlenecks and to modernize the country's economic infrastructure. Infrastructure Australia reports regularly to the Council of Australian Governments through the Federal Minister for Infrastructure and Transport. Infrastructure Australia has 12 members, appointed by the Federal Minister for Infrastructure and Transport.

Source: Infrastructure Australia, 2011.

the planning, appraisal and funding of critical infrastructure, including major urban transport schemes. In Australia, for example, 'Infrastructure Australia', provides advice to the Treasury on budget priorities and allocations in major infrastructure investments (Box 9.15) and how best to engage with the private sector in financing such projects.

CONCLUDING REMARKS AND LESSONS FOR POLICY

The challenges of urban mobility systems can only be addressed if they are seen as political challenges, requiring political consultation, decision and implementation, as opposed to seeing them as purely technical challenges requiring the 'right' technical solutions. Thus, urban governance and related institutional and regulatory frameworks are at the heart of developing sustainable urban mobility systems, and, indeed, sustainable cities. The primary purposes of such frameworks should be to remove obstacles to the effective participation of all stakeholders in the decision-making process; ensure that information employed to support urban transport proposals is comprehensive, accurate, impartial and transparent; and facilitate effective implementation of political decisions.

The development of effective urban governance and institutional frameworks is a complex issue. There are no universal solutions. However, this does not imply that the identification of 'good practice' is futile. Urban transport agencies and related organizations need to be aware of lessons of urban mobility planning 'successes' (and 'failures') from elsewhere (and other times). Furthermore, the concept of sustainable development is increasingly acknowledged as a key determinant of funding by international development agencies in their dealings with local decision-makers. Thus, it is expected that the 'success' in attracting external funding to achieve more sustainable outcomes in urban transport will, over time, lead to a spreading of good practice.

The institutional architecture for urban transport planning interventions and investments should facilitate holistic thinking and integrated actions consistent with strategies for sustainability. Thus, and due to their high costs, ad hoc, short-term, politically expedient decision-making should be avoided. In practice, political champions have played a critical part in creating integration in urban governance. Strong ***political leadership*** does play an important part in the planning and delivery of major transport infrastructure projects in particular.[131] It is important that such leadership is ***transparent and accountable***, to ensure that it doesn't become personal and transitional. This may not only enhance people's trust in the institutions and governance structures, but also ensure that these do not collapse once their champion leaves office.

The challenges of urban mobility systems can only be addressed if they are seen as political challenges, requiring political consultation, decision and implementation

The objectives, political will, processes and effectiveness of public engagement undertaken by urban transport organizations are context dependent. Without effective participation, proper stakeholder influence cannot be brought to bear. Measures need to be introduced that ensure that the mobility needs and 'accessibility rights' of vulnerable and disadvantaged groups are addressed. Participation and consultation should also be extended to informal sector transport operators (and their organizations), in particular due to their essential role in providing affordable mobility options for low-income groups in most developing countries.

Participation and consultation should also be extended to informal sector transport operators (and their organizations)

In urban areas where no single governance authority exists, this has proved a major impediment to integration in the field of urban transport. The development of sustainable urban mobility systems requires a ***matching of authority with territory***. 'Effective' institutions for governing integrated transport systems require empowerment that permits them to execute their responsibilities within their designated area boundaries. Evidence suggests that if institutions are matched to location – circumstances that encourage public transport systems, political institutions, existing policy frameworks, etc., to evolve in a mutually supportive manner – the task of integration is largely a matter of operational

The value of integrated policy-making, planning and management is increasingly being acknowledged

coordination. Where there has been a history of intense inter-agency competitiveness, the task of integration is far more problematic.

Experience indicates that there is a positive relationship between effective integrated transport systems and jurisdictions that have experience in dealing with 'regional' types of transport. Many of the cities with experience in dealing with issues of regional governance have over time developed improved multi-modal working relationships in the transport sector. Likewise, the extent of centralization and the degree of effectiveness of urban transportation institutions are very often positively correlated to the detriment of sustainable mobility planning. Thus – where 'centralization' represents the extent to which each mode has its own organizational cultures, constituencies as well as powerful interest groups that benefit from a modal focus – organizations are frequently focusing on the interests of the operator of a specific mode, rather than looking to intermodal integration.

Effective institutional development and governance for urban mobility requires good land-use planning, good public transport planning and good demand management – designed wherever possible to minimize the need to travel and to increase the modal shift toward public and non-motorized transport. To facilitate this, urban transport and land-use planning authorities require ongoing capacity-building designed to keep abreast of key issues at all levels and for all sectors of the population. Despite the increasing need for ***integrated land-use and mobility planning***, most cities and countries still separate the functions of land-use and transport planning at almost every level of government. However, the value of integrated policy-making, planning and management is increasingly being acknowledged, particularly (but not exclusively) in developed countries.

NOTES

1 Hudson and Lowe, 2004, p149.
2 Imran, 2010; Low et al, 2003.
3 Huzayyin, 2002.
4 Dotson, 2011.
5 Marshall and Banister, 2007.
6 Nantes Métropole.
7 Autorité Organisatrice de la Mobilité Durable.
8 Allen, 2011b, p5. See also Box 9.6.
9 GLA, 2010.
10 See Schrank et al, 2012; and Chapter 2. See also Chapter 7 on the environmental effects of this car dependency.
11 See, for example, Box 6.5.
12 Replogle and Kodransky, 2010, p1.
13 The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).
14 Cullingworth and Caves, 2009.
15 Canadian Urban Transit Association, 2010.
16 Irwin, 2003, p2.
17 CBC News, 2007.
18 Sayeg, 2009, pp23–27.
19 Glover and Low, 2004.
20 McKinlay, 2011, p1. The restructured Auckland Council came into being on 1 November 2010. See also the section on 'Addressing urban boundary complications' below.
21 Greater Wellington Regional Council, 2009, p3.
22 Suchorzewski, 2011.
23 See World Bank, 2002b, p2.
24 Suchorzewski, 2011.
25 World Bank, 1999b, piii.
26 Suchorzewski, 2011.
27 Pirie, 2011; Jirón, 2011; Jain, 2011; Pan et al, 2011; Chin, 2011; Balassiano and Alexandre, 2011.
28 Ministry of Transport, 1999.
29 Godard, 2011b, p54.
30 Ragheb, 2010; personal communication with Professor Ali Huzzayin, Cairo University, Egypt, in March 2013.
31 Figueroa and Rodriguez, 2011.
32 Jirón, 2011, p2.
33 Figueroa and Rodriguez, 2011, pp6–7.
34 Figueroa and Rodriguez, 2011, p12.
35 Jirón, 2011, p57.
36 El-Geneidy et al, 2011, p40.
37 El-Geneidy et al, 2011.
38 Houpin, 2011, p96.
39 Arora, 2011, p5.
40 Jain, 2011, p38.
41 These bodies were created by government – for cities with populations in excess of 1 million – to put in place or review legal frameworks for urban mobility planning, provide overall urban transport policy guidance and introduce the implementation of regulations to facilitate local governments to formulate policies, plans and programmes for the sector.
42 Chin, 2011.
43 In Jakarta, Indonesia, the responsibilities for urban transport planning, financing and development processes are divided among the Ministry of Public Works, the Ministry of Home Affairs, the National Land Agency, the Ministry of Trade and Industry and the Ministry of Agriculture and the National Planning Agency (Susantono, 1998).
44 Meakin, 2002.
45 Barter and Dotson, 2011, p8.
46 Pan et al, 2011.
47 Pan et al, 2011.
48 Pan et al, 2011.
49 See Chapters 6 and 7.
50 See, for example, the set of sourcebooks for policy-makers on urban transport produced by GTZ (see http://www.sutp.org/index.php, last accessed 19 February 2013) and ITDP's numerous publications, especially those advocating sustainable urban transport promoted by BRT schemes (see http://www.itdp.org/library/publications/, last accessed 19 February 2013).
51 Failures to commit to urban transport as an 'important' part of policy-making are often attributed to political expediency. Where democracies exist, votes are sought, won and lost on a shorter timeframe than most transport investments can yield tangible benefits.
52 World Bank, 2011a, p4.
53 See Grieving and Kemper, 1999; ISIS, 2003.
54 The integration of land-use and transport planning poses major organizational concerns; such as 'can traffic management be linked with transport planning into one institutional entity?' and 'should this be within a technical division (i.e. the City Engineering Department) rather than with Highways Engineering (with the latter being an entity in its own right taking care of road expansion and maintenance works)?'. There is also the issue of different time horizons: the long term (requiring strategic planning) and the short/immediate term (covering traffic management, public transport (bus) planning and designs, as well as truck movement management) (UNCHS, 1990). Furthermore, transport developments involve a category of 'transport service operator' (as distinct from 'user'), which is somewhat different from the 'owner' and 'occupier' stakeholder categorizations one finds with land-use changes.
55 UN-Habitat, 2009.
56 See Chapters 5 and 8.
57 See the discussion above on conditions and trends in the section on 'Countries with economies in transition'.
58 Martin, 1993.
59 World Bank, 2011a.
60 See Peters, 2011; Frye, 2011; McMillan, 2011.
61 Such as the World Bank (Dotson, 2011).
62 Glover and Low, 2004. For a discussion on different governance models for public transport, see PTUA, 2011.
63 Pirie, 2011, p6.
64 Dablanc and Lozano, 2011, pp11.
65 See Chapter 7.
66 Zegras, 2011.
67 'Wicked problems' describe problems that are exceedingly difficult or impossible to resolve on account of their incomplete, contradictory and changing features that make them typically difficult to identify

and/or define. They are products of interdependent factors that lead efforts to solve one dimension of a 'wicked problem' to reveal other problems (Churchman, 1967; Rittel and Webber, 1973).
68 See Arnott et al, 1994; Shoup, 2003.
69 Such as GPS, GIS, mobile telephony, relational databases, computerized map displays, automated road-user charging and enhanced digital infrastructure systems.
70 Vickers, 2009.
71 It is important to note that a common 'quick fix' solution to the absence of trained professionals in developing countries – namely the importation of foreign professionals to undertake the work at hand – is unsustainable, as such professionals tend to leave with their skills once their contracts expire.
72 Huzayyin, 1995.
73 Dotson, 2011.
74 Huzayyin, 1995. Such realities have seriously hindered the efforts of many international agencies, such as the World Bank (World Bank Independent Evaluation Group, 2007).
75 Barter and Dotson, 2011, p8.
76 Barter and Dotson, 2011, p8.
77 Barter and Dotson, 2011.
78 City of Seoul Government, 2009.
79 Pan et al, 2011, p43.
80 See http://www.mlit.go.jp/en/index.html, last accessed 19 February 2013.
81 See http://www.translink.ca/en/About-Us.aspx, last accessed 19 February 2013.
82 See http://capitalregionboard.ab.ca/, last accessed 19 February 2013.
83 See http://www.metrolinx.com/en/, last accessed 19 February 2013.
84 Canadian Urban Transit Association, 2010, p11.
85 See for example Archdeacon, 2008; Metrolinx, 2008.
86 As a result, the city of Nantes has benefited from both national and international recognition awards. The city was, for example, the winner of the CIVITAS City of the Year award in 2009, and was named as the European Green Capital for the year 2013 (Allen, 2011b).
87 See Box 8.6.
88 A discussion of these plans is included in the section on 'Mainstreaming mobility needs of the socially and economically disadvantaged'.
89 Allen, 2011b, p4.
90 Figueroa and Rodriguez, 2011.
91 Albalate, et al, 2012.
92 El-Geneidy et al, 2011, p41.
93 Kingdom of Jordan, undated.
94 Auckland Transport, 2012.
95 Offices of the New Zealand Minister of Transport, 2009, p1.
96 Auckland Transport, 2012.
97 Glover and Low, 2004.
98 See http://www.thinkingtransport.org.au/state-programs/victorian-transport-integration-act-2010, last accessed 19 February 2013.
99 Banister and Fitch, 2011, p3.
100 Banister and Fitch, 2011, p3.
101 GLA, 2010.
102 EC, 2001.
103 Ministry of Transport, 1999, p21.
104 Kane, 2002, p21.
105 See www.youthforpt.org, last accessed 19 February 2013.
106 McMillan, 2011, p29.
107 Kikoyo, undated.
108 Lai, 2010.
109 Dablanc, 2011, p3.
110 Dablanc, 2011, p4.
111 Dablanc, 2011, p8.
112 Jirón, 2011, p56.
113 Jirón, 2011, p56.
114 Rizvi, 2011, p7.
115 Rizvi, 2011, p9.
116 Pan et al, 2011. This form of self-financing for urban land and infrastructure is known as the '*genbu* contribution'.
117 Gullberg and Kaijser, 2004.
118 Stockholm County Council, 2006; Ingo and Viehhauser, 2005. The development plan covers the period up to 2030.
119 Scheduled to start in January 2013.
120 Deutsche Bahn, 2012.
121 Godard, 2011b, p57.
122 Godard, 2011b, p55.
123 Jirón, 2011, p48.
124 Jirón, 2011, pp48–49.
125 Meakin, 2002, p21.
126 See Box 8.7.
127 Zhao, 2010.
128 Leape, 2006, p173.
129 Under the Planning Act of 2008.
130 Mayor of London, 2012. These revenues will be collected by the London boroughs.
131 However, it should be noted that strong political leadership in many countries has coincided with rather authoritarian regimes.