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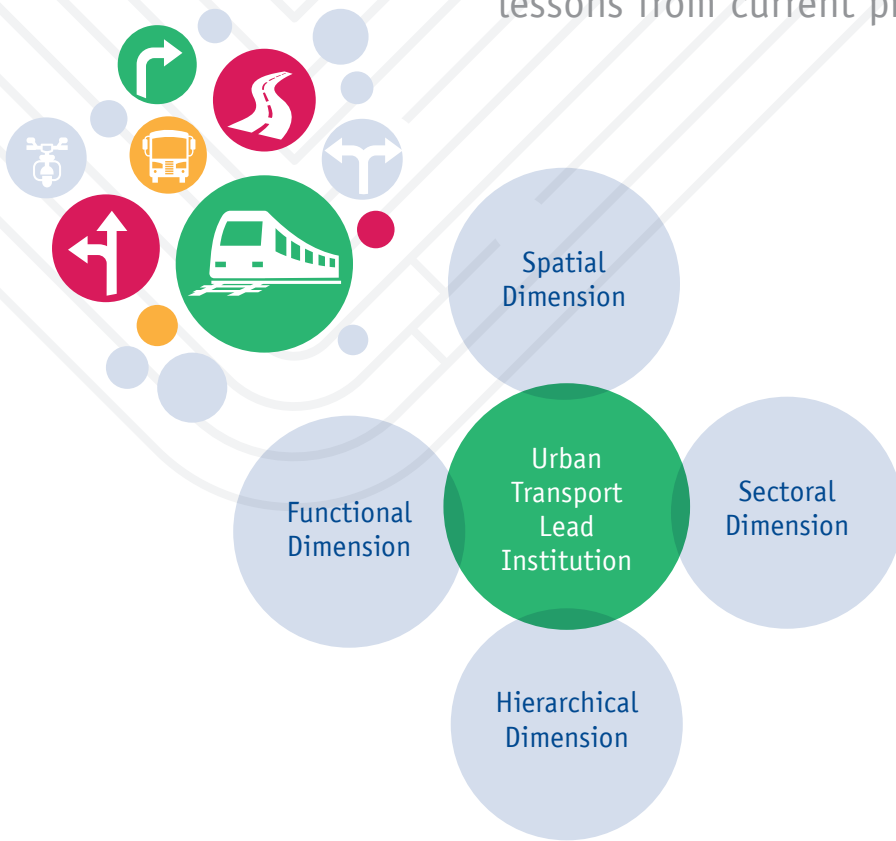# Institutional
Labyrinth

designing a way out for improving
urban transport services:
lessons from current practice

Spatial Dimension

Urban Transport Lead Institution

Sectoral Dimension

Functional Dimension

Hierarchical Dimension

Ajay Kumar | O.P. Agarwal

Institutional
Labyrinth

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Acknowledgments

The findings, interpretations, and conclusions expressed in this paper do not necessarily reflect the views of the World Bank. The authors are solely responsible for them.

Foreword

More than half of the world today lives in cities, with the bulk of future urbanization happening in the developing world. India and China alone will add more than 600 million people to their urban population in the next 25 years.

Cities contribute a disproportionately higher share of a country's GDP compared to their share of the population. That is why they are often described as the "engines of economic growth". However, if they are the engines of economic growth, the transport systems are the "wheels" of this engine. The transport system connects people to jobs. It connects city residents to education, health care, recreation and to other city residents. Unfortunately, meeting the transport demand of a growing population has led to several negative consequences, the most visible of which is congestion. Increasing air pollution, road accidents and the rapidly increasing demand for fossil fuels all have extremely adverse impacts on global well-being.

Dealing with these problems is very complex. It is not just about building new roads and flyovers or about adding more buses or metro systems. It is much more than that. There are issues relating to affordability, disability, gender, livelihoods, political economy, human psychology, local culture, energy security, air quality and so many others that need to be taken into account. Therefore, it is not just engineering that is important, but there are very strong linkages to land use planning, finance, governance, economics, and a host of different disciplines. Social scientists, economists and urban planners are as important to urban transport as are engineers. All of them need to come together. There is a need for comprehensive, multi-disciplinary planning and decision making.

Unfortunately management of the multiple functions is fragmented and the norm is multiple government agencies, at different levels of government with different or similar mandates in urban transport infrastructure and services. There is little or no coordination among them. It is important to recognize that the problems of urban mobility cannot be resolved by any one of them alone, either by building wider roads, metro rail, or bus rapid transit lines. There is much more to do if the objective is to efficiently connect people to jobs, education and other needs in a manner that is safe, clean, affordable, and equitable.

If urban mobility challenges are to be overcome, lead institutions that take comprehensive responsibility for urban transport are critical. Several cities have been attempting to set up such institutions, but only a few have succeeded. They offer important lessons for others to draw from.

This paper highlights the experience of some of these cities and points out important variations among these institutions and key success factors. It offers good global practices to draw from the experience of cities that have succeeded and serves as an important resource for those working towards setting up lead transport institutions.

Marc Juhel   Abhas Jha
Sector Manager, TWITR   Sector Manager, EASIN

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Abbreviations and **Acronyms**

AJL	Ahmedabad Janmarg Limited
AMC	Ahmedabad Municipal Corporation
AMCO	Area Metropolitana de Centro Occidente (Colombia)
AOTU	Autorité Organisatrice des Transports Urbains (Urban Transport Authority)
AUDA	Ahmedabad Urban Development Authority
BRT	Bus Rapid Transit
GLC	Greater London Council
GVRD	Greater Vancouver Regional District
GVTA	Greater Vancouver Transportation Authority
LAMATA	Lagos Metropolitan Area Transport Authority
LRT	Light Rail Transit
LTA	Land Transport Authority (Singapore)
MINVU	Ministry of Housing and Urbanism (Chile)
MRT	Mass Rapid Transit
MRTC	Mass Rapid Transit Corporation (Singapore)
MPW	Ministry of Public Works (Chile)
MTT	Ministry of Transport and Telecommunication (Chile)
PTC	Public Transport Council (Singapore)
RATP	Régie Autonome des Transports Parisiens (Transport Authority for Paris)
SMG	Seoul Metropolitan Government
STIF	Syndicats Transportes Îles-de-France
STP	Syndicat des Transports Parisiens (Paris)
TransLink	South Coast British Columbia Transportation Authority
TfL	Transport for London
UMTA	Unified Metropolitan Transport Authority

●●● **Key** Messages

Typically, multiple agencies, at different levels of government, are involved in the management and delivery of urban transport infrastructure and services. More often than not, there is little or no coordination among them. This results in duplication and inefficiency in the use of resources and poor-quality services. The need for institutional coordination across space and function is increasingly being recognized as critical to developing an integrated and comprehensive urban transport system.

Although many cities are attempting to establish effective lead urban transport institutions that encompass multiple jurisdictions, functions, and modes, only a few have succeeded. These latter institutions evolved over a number of years, encountering challenges and lessons from which others can benefit.

Some of the most important lessons of these lead institutions are as follows:

- No single institutional model fits all situations. The right model will depend on the political and administrative ethos of the country and city.

- Urban transport institutions take time to evolve. The ideal may not result at the time of establishment, so patience is needed for expectations and possibilities to align adequately.

- New urban transport institutions need financial resources and especially decision making authority over the available financial resources to be successful. It is this aspect, more than any other, which provides the power to the institutions to achieve their plans and successfully carry out their mandate.

- Any new transport institution will experience teething pains in addition to opposition from existing agencies. Success for a lead institution critically depends on its ability to pursue policies in the broad public interest, develop technical capacity and a secure financial basis for carrying out its tasks, as well as develop strong support at the political level.

- Institutional change can be catalyzed by external "trigger events", such as an election, political movements, public protests, macroeconomic conditions and it is critical to engage civil society through a communications program.

●●● Executive Summary

Severe congestion, poor air quality, increases in road accidents, and explosive growth in energy consumption are manifestations of rapid motorization in cities around the globe, especially in the developing world. The tendency in most developing cities has been to deal with these problems in a piecemeal fashion, largely through supply side interventions, such as widening roads, constructing flyovers, or building high-cost mass

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transit systems. It is becoming increasingly recognized that effective solutions lie in comprehensive and holistic approaches that integrate what would normally be patchwork efforts and, in addition, combine supply side efforts with demand side measures. In general, this means that multiple, well-integrated actions need to be taken. Integrated and comprehensive thinking and implementation is required across multiple subsystems and disciplines, such as land use planning, environmental quality, energy efficiency, and services for the poor and physically disadvantaged.

The ability to undertake comprehensive planning and execution that is integrated **functionally**, **spatially, sectorally**, and **hierarchically** is too often constrained because of the highly fragmented governance of urban transport in most cities. The functions that need to be performed can be classified as strategic, tactical, and operational. Strategic functions include policy formulation and long-range planning; tactical functions involve regulation and detailed planning; and operational functions concern the construction of facilities and ensuring the availability of services.

"Institutional Labyrinth" documents examples of a few cities that have been successful in establishing effective lead institutions for the management and delivery of urban transport infrastructure and services. It synthesizes the experience of these cities, with particular reference to the following aspects of the institutions:

- Legal basis
- Jurisdiction
- Functions
- Personnel profile and size
- Management structure
- Financing arrangements
- Evolution

The *legal basis* of lead institutions can be through the mandates of existing government agencies, such as provincial governments (Delhi); municipal bodies (Seoul and Ahmedabad); or entities established through special legislation (e.g., Singapore, London, Vancouver, and Lagos) or generic legislation (e.g., Indore). They can also be established through an executive order (Bangalore and Chennai) or mutual agreement between two or more municipalities (Pereira Dosquebradas, and La Virginia). Those founded through special legislation tend to offer a mix of the clout that comes with legal backing and the flexibility of quicker decision making typical of a commercial entity. Depending on a country's political and administrative composition, it might take several years before the legal basis for an independent authority can be enacted. As an interim measure, some cities have successfully set up a common platform of working through informal agreements (e.g., memoranda of agreement, MOU's) or executive orders.

The *jurisdiction* of lead institutions varies from city to city. In some cases, as with Ahmed-

abad and Singapore, it is limited to one municipality. In others, such as Vancouver and Paris, it covers adjoining, independent cities which together form the metropolitan area. The basic principle in determining the jurisdiction of a lead agency for transport is the need for transport systems to serve the origins and destinations of residents spread across an entire metropolitan area (travel knows no boundaries) and this may include multiple municipal jurisdictions.

The range of *functions* performed by a lead agency can vary from a limited focus on public transport to more comprehensive responsibility for all urban transport modes, infrastructure, facilities and services. Within its role, the lead institution can either perform strategic policy and planning functions only or also be responsible for direct provision of services. Deciding on the most appropriate approach for a city depends on existing governance structures. Having a lead institution with a high degree of comprehensive responsibility allows better integration of transport across the array of needs. In some situations, however, especially if there are several municipalities within a larger metropolitan region, individual city governments may be unwilling to relinquish responsibility for the provision of some services to a regional entity.

The responsibilities of lead public transport agencies have been evolving in the last two or three decades. The trend has been to separate the service planning functions (routes, schedules, level of service) from direct service provision, maintenance and operations. This is based on the rationale that service planning functions are performed in the public interest and must be based on public policy that considers general social welfare, while delivery of services are best performed on a commercial basis by entities selected on a competitive basis. Thus, the emerging trend is for a public entity to plan services and then contract them, through a competitive process, to private and/or public operating companies.

The personnel *profile and size* of a lead urban transport agency vary considerably based on the precise functions it performs and the mechanisms in place for executing them. The manner in which an agency carries out its functions is a crucial issue that should be addressed when creating the organization. Of particular importance is whether it should do everything in-house or outsource some functions on assignment or contract. In some cases, public transport services are operated through direct subsidiaries of the lead agency, and the entire workforce is on the books as agency staff. In other cases, public transport operations are handled by entirely different entities, with the lead agency only determining service parameters, such as routes, schedules, fares, and so on. In cases where the lead institution delivers services through its own subsidiaries, manpower strength is high, such as at Transport for London and TransLink (Vancouver). Those that contract services to others, however, have a leaner structure, as with *Syndicats Transportes Îles-de-France* and the Lagos Metropolitan Area Transport Authority.

The management structure of lead institutions varies to some extent, but in general, it consists of a board supported by a technical entity or secretariat manned and headed by dedicated, full-time professionals.

Stable and secure *financing* is extremely important to ensure that lead institutions have the financial muscle to actively fulfill their coordinating and facilitating roles. It is this ability that enables them to exercise influence in discharging their coordinating role. While a legal mandate to coordinate between different agencies is helpful, nothing is more effective than a lead agency's ability to prioritize projects and allocate "real money." Successful lead institutions either receive significant financial grants from government (London and Singapore) or have been empowered to collect taxes that provide them adequate resources for both their own internal operations and actual investment and operating subsidies where appropriate and needed (Vancouver, Paris, and Lagos).

The structure and form of lead agencies has evolved over several years. The starting point for most developing cities in the post World War II period was a predominance of essentially unregulated, self-financing private bus and mini-bus operations and the fragmentation of planning, service/operations regulation and investment responsibilities among multiple municipal institutions. Investment in highway infrastructure was often planned, financed and undertaken by national highway entities, while urban rail systems, if any, were also national government undertakings.

Needless to say, there was a strong bias towards capital investments in massive transport infrastructure projects of all types and modes. The cities with successful urban transport or public transport, however, were driven by a desire to design and implement well-planned transport systems complemented by comprehensive management of land use reflecting a concern for social equity and over-all sustainability.

The key to ensuring the sustainability and effectiveness of lead transport institutions derive from:

- Their ability to deliver public value
- The political support they enjoy and their legal authority
- Internal capacity, through personnel, and secure sources of finance for their own operations
- Decision making authority over financial resources for investment and operating subsidies

National governments can play a pivotal role through their ability to provide financing to lead agencies at lower levels of government and take advantage of economies of scale by coordinating and undertaking activities of interest to multiple cities, such as capacity building and research.

I. Background and Objectives

For the first time in the history of mankind, the majority of the World's population lives in an urban area. The proportion and numbers continue to grow. At the turn of the twentieth century, two out of every ten people lived in an urban area. By 1990, the number had increased to four out of ten, and by 2010, more than half of all people lived in an urban environment. By 2030, six out of every ten people are expected to live in a city, and by 2050 this will go up to seven out of ten. World energy consumption in urban transport, which is currently about 8 percent of global energy consumption, is expected to double by 2050, and global carbon dioxide emissions are projected to more than double, exceeding 1 billion tons by the same year (IEA 2013). Most of this growth is expected to take place in the developing world, with China and India together projected to add more than 500 million people to the urban population during the next thirty years.

The growth in urban populations has been accompanied by an increasing demand for such services as housing, transport, water, energy, and other human needs. Meeting the demand for this growing segment of the population has created a challenge for municipal authorities. In the transport sector, it has led to rapid motorization which is the direct cause of many urban maladies. Growing traffic congestion, deteriorating air quality, increasing exclusion of the poor, increasing incidence of road accidents, and increasing greenhouse gas emissions have become some of the key adverse effects of urban growth.

The tendency in a number of cities has been to deal with transport problems in a piecemeal manner and largely through supply side interventions, such as widening roads, adding flyovers, or building high-cost mass transit systems. It is, however, being increasingly recognized that solutions lie in a comprehensive and holistic approach that integrates these piecemeal efforts and also combines supply side measures with demand management. This generally means that several actions need to be taken across different sectors and multiple subsystems, but in a well-integrated manner. This requires comprehensive and integrated thinking about land use planning, environmental quality, energy, services for the poor and physically disadvantaged, and so on.

While the available literature has plenty to say about what should be done, it does not venture too much into suggesting who should do it. Unfortunately, the ability of cities to undertake comprehensive planning that is integrated functionally, spatially, sectorally, and hierarchically is too often constrained because of the highly fragmented governance of urban transport. As a result, there is usually no single "lead agency" that can take responsibility for urban transport in its entirety, making it an "institutional orphan."

Responsibilities for urban transport, however, need to be comprehensively assigned to a lead agency to overcome the problems of poor coordination and execution. It is within this context that this study has been carried out to understand how such lead institutions have

been established in a few select cities and metropolitan regions and how urban mobility issues are currently being managed in them. The focus is on the metropolitan or city level, but the implications for national governments are also covered.

The objective here is to assess what institutional models are worthy of adopting. The cities and regions studied vary in size, from slightly more than 1 million to more than 10 million, and are spread across North America, Latin America, sub-Saharan Africa, South Asia, and East Asia (see Table 1). In many cases, the areas are not a single municipality but cover several contiguous municipalities and can be considered a region. They represent a range of governance structures, economic, social, and spatial characteristics, and personnel skills. In some instances, examples are drawn from other cities to underscore particular issues. A diverse sample has been chosen in recognition of the fact that no single model can be developed as a "one size fits all" approach appropriate for all cities. The needs vary from city to city, largely depending on the prevailing administrative structures, governance philosophies, institutional arrangements, and extent of institutional fragmentation. The study also looks at how cities have dealt with some of the key issues that inevitably arise when establishing lead urban transport institutions.

Table 1: The Study Cities

City	Population in 2011 (million)	Metropolitan Area (km²)	Annual Growth Rate (%)
Ahmedabad	6.35	1,330	4.0
Lagos	18.0	999.6	3.0
Paris	12.09	12,012	0.7
Pereira	0.8	702	NA
Santiago	5.98	678	2.8
Seoul	24.1	11,731	0.6
Singapore	5.18	712	2.9
Vancouver	2.42	2,877	2.2

All the case study cities introduced fundamental reforms under the basic premise that institutional weaknesses are the source of many observed failures in urban transport. They underscore the challenges and opportunities faced in creating new institutions, the manner in which certain key issues are handled, and the lessons thus far learned. The target audience of "Institutional Labyrinth" is primarily the senior decision makers responsible for setting up these organizations. The study examines the kinds of issues with which they should be concerned when urban transport institutions are being set up and operationalized.

Following Section I, defining the scope and objectives, Section II discusses the role of government(s) in urban transport. Section III presents a framework of functions that need to be performed if the objective of sustainable urban mobility is to be achieved. In Section IV, multiple issues are examined that need to be considered when setting up lead institutions for urban transport. These include the range of functions performed, financing and legal arrangements, organizational structure, manpower needs, and the evolution process. It looks at how, if at all, these issues have been dealt with in select cities around the world. Section V provides a synthesis of some of the key success factors, and Section VI assesses the lead role national government has played in the required reforms. Section VII presents the conclusions from the study.

II. Role of Government

In order to plan for the establishment of lead institutions to manage urban transport, it is useful to first look at whether governments actually need to play a role, and if so, what the contours of that role should be.

Governments play three major roles in urban transport:

- Regulation

- Provision of infrastructure

- Provision of public transport

Regulation

The regulatory role exists because there could be serious compromises in safety if certain basic standards and rules for the use of road space were not laid down and duly enforced. Thus, individuals must be certified as being capable drivers and vehicles certified as being fit for use on roads. Rules are also needed regarding speed limits, who should use which side of the road, and orders of priority at intersections. Without these, roads would be zones of unacceptable safety risks and chaos. Governments are best suited to establish the rules and standards of the road and to enforce them.

Provision of infrastructure

The infrastructure provision role stems from the need to construct, operate and maintain certain facilities for the common good. The private sector cannot always be relied upon to provide them, as they may not always have a potential for profit. Thus, roads, sidewalks, traffic lights, and parking in an area with little demand are best provided by the government.

Provision of public transport

The public transport services role stems from universal mobility being a basic human right. In any modern society, mobility is expected to be available to all, regardless of income and whether or not the necessary services are profitable. In contrast, the private sector would only be interested in providing transport services expected to be profitable, and to those that can afford the fare necessary to make it so.

In cities where government plays only a limited role in the provision of public transport services, certain routes may have excess service, resulting in dysfunctional competition, while other routes may lack service entirely. Governments, therefore, need to step in to make services available to all, by regulation and, if necessary, by offering to subsidize them.

In general, government's role in providing public transport is manifested in four forms These are in increasing order of involvement, as follows:

- Approval of routes and fares as proposed by private operators

- Determination of routes, fares, and service quality and contract provision of such services from operators, if necessary, by offering to subsidize them

- Overall provision of common services and facilities

- Direct development and operation of all public transport services by a state-owned entity

The first form involves government primarily discharging its regulatory role of ensuring that services are safe and affordable, while in the second, it takes on a more active role, by determining the kind of public transport service that should be available and contracting for such services, including through subsidies if necessary. In the third form, government goes even further and provides those services that have considerable economies of scale and can be best provided as a common service to all operators (i.e., terminals, bus stops, passenger information, common ticketing, and so on). It may also provide high cost items like rolling stock through low-cost leases to private operators. In the fourth form it takes on the responsibility to operate all services itself.

In this context, it should be noted, responsibilities for urban transportation typically cut across local, provincial, and national levels of government. At each level, moreover, different agencies license and regulate bus operators; build and maintain roads, transitways, railways, bus lanes, terminals, and related facilities; control traffic lights and rules; and enforce rules. In addition, entirely different institutions have the responsibilities for preparing city development plans, often without consulting or coordinating with transport planning agencies.

Thus, the appropriate role for the government, at all levels, would span functional, spatial, sectoral and hierarchical dimensions, as follows:

- *Functionally*: An urban transport system involves a multiplicity of dimensions—among them land use, environment, health, technology, finance and economics, politics, human behavior, and gender—that collectively illustrate the complexity of the system.

All these components have linkages and need to be assessed in a comprehensive and holistic manner, rather than as individual segments. There are strong linkages between the demand for transport and the way a city is laid out, hence a linkage between transport and spatial planning. Likewise, there are strong linkages between transport and information and communications technology. For example, good e-commerce leads to a reduced demand for transport and can make transport more efficient. Density and transport are linked in that higher densities often lead to a lower demand for transport. As a result of the linkages between and among the various dimensions of urban transport, strategic action in planning requires some form of integration or coordination among institutions with different authorities and interests.

● *Spatially:* Growth of urbanization has given rise to metropolitan areas that encompass multiple municipalities. Coordination of transport needs that cross the boundaries of multiple, spatially linked municipal governments may need an institutional approach that is regional in scope. While administratively a municipality is often the decision-making unit, when local travel extends across several municipalities, government authorities must work together to implement a consistent and coordinated set of transport interventions. In addition, the need for some uniformity in standards and consistency in policies calls for institutional coordination at the provincial and national levels. Beyond that, serious concerns related to climate change require coordination even at the international level.

● *Sectorally*: A typical trip made by a person often involves multiple segments, each using a different transport mode, e. g., walking to the nearest bus stop, getting on a bus and then transferring to some form of mass rapid transit. With the involvement of multiple modes—e.g., formal and informal bus, some form of mass rapid transit (MRT), e.g., metro, Light Rail Transit (LRT), Bus Rapid Transit (BRT)—integrated planning is critical to ensuring seamless transfer across the modes, minimizing transfers, establishing a common fare structure and payment basis and providing actual origin to destination passenger information.

● Effective planning and management of urban transport requires diverse skills and a wide range of institutions—among them agencies dealing with road infrastructure, public transport management and operations, land planning, safety, the environment, and road traffic management—to work together. Thus, no single mode can be considered in isolation, but instead has to be examined as part of an integrated system in coordination with the other modes of urban transport.

● *Hierarchically:* Different tiers of government are involved in providing and managing urban transport at the city level. Close coordination is needed between different (vertical) levels of government or across several agencies at the same (horizontal) level, making it imperative to create appropriate institutional structures for such coordination. A multiplicity of agencies across different tiers of government, and even within the same tier, creates a silo approach to service delivery and urban planning that disperses accountability. For example, if the metro rail and bus services are planned

and operated by different agencies, they might compete against each other and fail to provide smooth and integrated service. In a similar vein, if land use and public transport are planned separately, the expected ridership may not materialize.

III. Framework of Functions **To Be Performed** in the Regulation, Management, and Delivery of **Urban Transport Services**
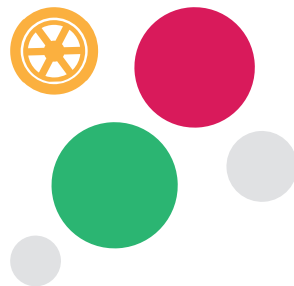
Van de Velde (1999) has highlighted three levels of functions that need to be performed in the delivery of any service:

- The **strategic level**, which concerns the formulation of general aims and determination of the broad terms and means that can be used to attain these — in short, "what we want to achieve."

- The **intermediate/tactical level**, which involves making decisions on the means for achieving goals and how to use these means most efficiently—in short, "what product can help to achieve the aims."

- The **operational level**, which concerns ensuring that orders are carried out and that it happens in an efficient manner—in short, "how do we produce that product."

Based on Van de Velde's approach, the functions that need to be performed in the regulation, management, and delivery of urban transport services can be categorized into the following three levels: strategic and policy functions, tactical functions, and operational functions. (please see Figure 1 for a relation between strategic, tactical, and operational functions)

Tier 1: Strategic and Policy Functions

Strategic and policy functions involve developing a vision and formulating appropriate policies to realize the vision. Strategic transport functions include long-range major infrastructure investment needs assessment reflecting future growth, long range financial analysis and planning, and so on. Policies may involve approaches relating to safety standards, how investments and operations are to be financed, how much of the costs should be recovered from fares and how much should derive from other sources, the role of the

private sector, performance standards to be met, network coverage and other matters. An important strategic function is to assess the adequacy of current governance structures and institution and develop recommendations for change which may take a long time to accomplish.

Typically strategic and policy functions set the standard or provide the basis for shorter range, more geographically focused planning activities.

The outcomes of these functions influence multiple agencies and, therefore, require coordination and agreement among them. In an ideal situation, the functions would be performed by a lead institution. In the absence of a legal basis to develop a single, top-down strategic plan, an important strategic function for a lead agency is to integrate various modal or sector plans into a single one. For such a "bottom-up" approach to be meaningful, the plan that emerges should be resource constrained and real, transparent decisions made based on objective criteria.

Tier 2: Tactical Functions

Tactical functions can be divided into two sublevels: regulation and planning.

Regulatory functions

Regulatory functions are usually required under statute. They tend to involve some aspect of public health, safety, and equity. They can be further divided into safety regulation and commercial regulation.

Safety regulation typically seeks to ensure that the operation of transport services is safe and does not cause injury or damage to the public. For example, the function of issuing a driving license would fall under this category. In addition, the function of setting driving speeds, traffic management and enforcement of traffic rules, as well as vehicle specifications and maintenance standards would be part of this group of functions for ensuring public health and safety.

Commercial regulation seeks to ensure a degree of equity, prevent monopoly pricing and attempt to match supply and demand. Thus, public transport operators are often required to obtain a permit from a government entity to provide services. The permit generally establishes the route(s) on which service will be offered and might also lay down certain other conditions, such as frequency and hours of operation. Requiring a permit is also necessary to avoid oversupply of service on some routes and undersupply on others. This aims at equity in the availability of public transport services to all parts of a city.

In most cases, a public entity also sets the fares that a public transport operator can charge. This ensures that operators do not take advantage of such potential monopoly situations as low levels of supply at certain times of the day or to certain parts of a city. Fares are also prescribed to ensure that use of public transport is affordable so that those who cannot procure their own means of transport still have access to transportation services.

Planning functions

Planning functions, unlike regulatory functions, are not usually required by statute but are nonetheless necessary for investment and operations to take place in a systematic and efficient manner. In the context of urban transport, these functions consist of infrastructure planning and service planning.

Infrastructure planning helps make investment decisions that maximize the benefit from limited resources. Good planning ensures that essential new facilities, like roads, public transport facilities, sidewalks and parking spaces are cost-effective and delivered in adequate measure. It consists of activities such as demand forecasting, economic and financial analysis, environmental and social assessment and other studies needed to prepare actual investments. These activities are not carried out as a part of strategic planning, but are usually undertaken once the need for a certain facility or investment is identified as part of a strategic plan.

Service planning is preparing for the actual delivery of services, in this case, public transport services. The need for a public entity to undertake this function emanates from a belief that if the obligation for ensuring service were left entirely to a commercial organization, whose primary motive is profit, only commercially viable routes would be served, thus depriving other areas access to transport. Similarly, the profit motive might restrict services to peak periods, to the neglect of off-peak hours.

Separation of planning from operations means that the planning function can be undertaken as a common exercise across all operators. Operations could then be divided among multiple operators to secure competitive efficiency and be procured through competition "for" the market (Gwilliam and Scurfield 1996). It allows for competition in providing services without compromising on the need for integration at the planning level.

Typical service planning activities would include the design of a public transport network or individual routes in terms of terminals and alignment, determination of demand along routes and supply arrangements to meet the demand, establishment of operating standards and levels of performance, calculation of the level of service on each route, development of contracting terms and actual contracting for operations, design of a compensation mechanism, coordination among multiple operators, revenue sharing where necessary, as well as monitoring and evaluation.

Tier 3: Operational Functions

Operations can be divided into:

- The construction, management and maintenance of infrastructure and facilities, like parking, parking, transitways and terminals
- The provision of public transport services

Infrastructure and Facility Construction, management and maintenance

Construction of infrastructure and facilities includes such activities as building roads and bridges, footpaths and walkways, parking facilities, transitways, bus stops and terminals

Public Transport Operations

The operation of public transport services can be further divided into the operation of common services and the operation of independent services.

Common services are those required by all operators. Typically these are services that enjoy a natural monopoly and thus lead to economies of scale in providing them as a common service or facility for all operators. Examples of these kinds of services include the following:

- *Provision and upkeep of bus stations and passenger terminals:* Passenger terminals and bus stops are among the natural monopolies in the public transport business. It would make no sense for each operator to have its own terminals and bus stops, so they share these common facilities.

- *Passenger information systems:* It would be confusing and inconvenient for users if each operator had its own passenger timetables of bus schedules, but much more convenient to have a common passenger timetable covering all operators.

- *Revenue sharing among intermodal operations:* With multiple operators, there may be a need for a common entity to collect fares and arrange sharing of them on an agreed basis.

- *Accident recovery:* All operators cannot be expected to have their own systems for accident recovery, so it is provided as a common service.

- *Public relations:* Often the use of public transport is promoted generally, rather than through each operator marketing its own services.

- *Security services:* Providing security is most efficient when provided as a common service, rather than each operator procuring its own.

- *Dispute resolution:* With multiple operators, there will be disputes, so it is efficient to have in place dispute resolution machinery, rather than involving the judiciary in resolving minor disputes.

Independent services involve the actual operation of discrete facilities and services, such as bus systems, metro rail systems, tram systems, BRT and parking garages. The nature of the functions involved here are largely day-to-day operations, among them scheduling of vehicles for public transport services on different routes, deployment of staff and crew, maintenance schedules for vehicles, collection and deposit of fares, and procurement of spare parts and stocks, maintenance of rolling stock. The objective is to ensure that service plans are implemented.

Thus, there are multiple functions that need to be performed that ensure an integrated transport system in a city. These functions are unfortunately usually fragmented across de-

partments and agencies as well as levels of government. This is perhaps the biggest barrier to putting in place a sustainable transport system in any city. Establishing a lead agency to take comprehensive responsibility for urban transport seems to be the best approach, especially in fast-growing cities that require multimodal systems of transport. Smaller cities may not need such a lead institution immediately, but if projections indicate they will grow fast in coming years, it would be prudent to establish a lead institution at an early stage of public transport development.

Figure 1: Functions To Be Performed in the Provision of Urban Transport
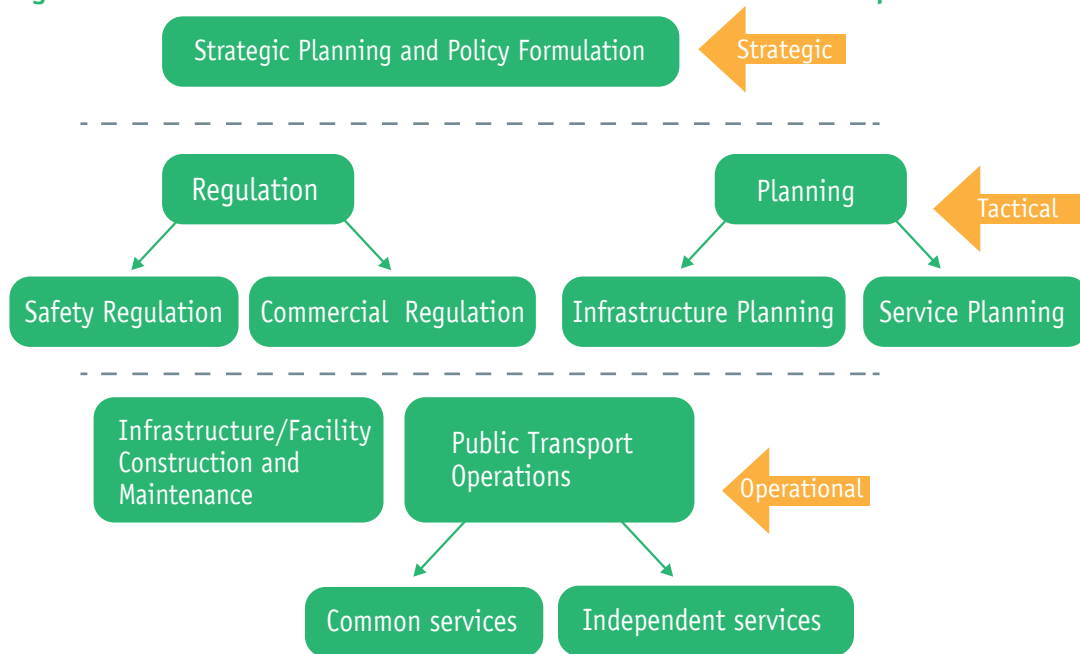
IV. Key Issues in **Establishing Lead Institutions**

There are several issues that usually arise when establishing lead institutions. This section presents some of them and the manner in which they have been addressed in the cities studied. The issues examined are as follows:

- Legal basis

- Jurisdiction

- Functions performed

- Personnel profile and size

- Management structure and accountability

- Financing arrangements

- Evolution

IV.1   Legal basis of the lead institution

As discussed earlier, lead institutions can either be set up as independent authorities or as agencies within national, provincial, or city governments. The specific form depends on a country's political history, current philosophy and the institutional framework of governance. Examination of cases from around the world shows that there are five principal forms that lead institutions for urban transport have taken:

- An existing government department or municipal authority takes on the function

- A separate entity is established under a dedicated statute establishing the entity

- A separate entity is created under a generic statute applicable to commercial entities, such as legislation setting out rules governing businesses

- A government order establishes the entity without legislative backing

- Multiple jurisdictions reach a mutual agreement to establish an entity

The Seoul Metropolitan Government and the Ahmedabad Municipal Corporation offer examples of a municipality performing the lead agency function for all modes of urban transport. In most cities in India, the concerned government department at the provincial level performs this function, such as the Department of Transport for the Delhi provincial

government. In Moscow state (*oblast*), the Department of Transport has overall responsibility for urban and suburban transport.

In contrast, Lagos, London, Paris, Singapore, and Vancouver have established separate entities under dedicated legislation. In Vancouver, the British Columbia Provincial Legislature in July 1998 passed the Greater Vancouver Transportation Authority Act, under which the Greater Vancouver Transportation Authority (GVTA), or TransLink, was established and became the agency responsible for planning, funding, building, and marketing an integrated transportation system for the Greater Vancouver Regional District (GVRD), now Metro Vancouver.

In Singapore, the Land Transport Authority (LTA) was incorporated in August 1995 under the Singapore Land Transport Authority Act. In conjunction with the act establishing LTA, a rapid transit systems bill and street works bill were passed to provide for the transfer to LTA all the existing functions and powers of the Mass Rapid Transit Corporation (MRTC), Public Works Department, and Registry of Vehicles.

The Lagos Metropolitan Area Transport Authority (LAMATA) was created by an act on January 13, 2002, and formally launched on December 2, 2003. The statute grants LAMATA powers to facilitate the discharge of its statutory functions, including the power to levy and collect user charges in connection with the provision of its services and to collect any other tariffs, fees, and road taxes as may be authorized by the governor. The law establishing LAMATA was strengthened in 2007 to include planning and regulatory functions across the various modes of transport.

In Paris, the *Syndicat des Transports Parisiens* (STP), a single authority in charge of public transport, was created in 1959 based on a decree of September 1949. In 1968, its area of jurisdiction was enlarged to cover the seven departments of the Paris region, and it was granted financial autonomy. It changed its name to *Syndicats Transportes* Île-*de-France* (STIF) when Law 2000-1208 was adopted, in December 2000, ratifying the addition of the Paris region to its board.

More recently, in 2013, Cairo passed a decree to establish the Transport Regulatory Authority for Greater Cairo to plan, regulate, and deliver sound urban transport services in the Cairo region. Kuwait is contemplating similar legislation to establish a public authority for land transport.

The Indian cities of Indore and Jaipur provide examples of a separate entity being established under a generic statute to perform the functions of a lead agency for public transport. The Indore City Transport Service Limited and the Jaipur City Transport Service Limited were set up under a generic national law that regulates commercial and business entities in the country. Such an arrangement seems to be satisfactory when the lead agency has responsibility only for the management of public transport and is not involved in regulatory issues or the collection and use of government taxes.

India also has examples of lead agencies being set up under executive orders of the government, without legislative backing. A number of Indian cities have set up a Unified Metropolitan Transport Authority (UMTA) by government order. Bangalore, Chennai, and Mumbai are a few examples (IUT 2013). UMTAs are essentially committees composed of senior officials of all the related government departments and headed by the chief secre-

tary of the province. They are powerful by virtue of all the key players involved in the decision-making process. Their effectiveness depends, however, on how often they convene and the interest of senior officials to participate in UMTA meetings. Attempts to delegate responsibility to junior officers or delays in organizing regular meetings have often resulted in reducing the effectiveness and value of such committees.

Colombia provides a good example of individual jurisdictions coming together by agreement to set up metropolitan area institutions to oversee, manage, and plan urban transport. Colombian Law 128 of 1994 provides for municipalities to form metropolitan areas in which combinations of two or more municipalities integrate around a core city. Accordingly, the municipalities of Pereira (pop. 500,000), Dosquebradas (pop. 200,000), and La Virginia (pop. 35,000) mutually agreed in 1992 to the establishment of the *Area Metropolitana de Centro Occidente* (Metropolitan Area of Centre Occidente) (AMCO), which functions as the lead agency for transport in their metropolitan area.

AMCO is responsible for the regulation of all public transport (except for BRT services, managed by Megabus), design of public transport routes, fare fixing for public transport, authorization of new companies to enter the public transport market, issuance of permits for a vehicle to operate as a public service vehicle, authorization of fuel stations, and collection of the gasoline tax.

These different arrangements naturally have their relative strengths and weaknesses. Having provincial (state) government departments lead a city's urban transport activities has the disadvantage that they have responsibilities toward a larger jurisdiction, typically several cities, within the province. As a result, the government at the provincial level is less likely to relate to the specific needs of residents at the municipal level. In addition, government departments are not well equipped for quick decision making and tend to be rather slow. The flexibility to make financial decisions is especially sluggish. This arrangement, however, does have the advantage of being able to effectively coordinate between the requirements of a city and the adjoining suburbs. It also has the backing of high-level functionaries whose decisions are more likely to be complied with lower down the chain of command. Having the municipal or metropolitan body itself perform the lead agency function has the disadvantage that it also has other responsibilities toward the city, such as water supply, sanitation, and solid waste management. As a result, transport may not receive the kind of professional attention it deserves. Decision-making processes here would also be slow, as is inherent in such entities. The advantage is the backing of high-level functionaries, such as the mayor, and hence a greater probability of compliance with decisions taken.

An authority created under special legislation tends to offer the clout of legal backing. They may not be constricted by established government procedures or by the limits of government salary scales in hiring professional staff. The effectiveness of such an authority, however, depends on how well it has been resourced or staffed with competent professionals and guided by a dedicated and committed chief executive.

The existence of a law may be necessary for an authority's creation, but insufficient for ensuring effectiveness, especially in the case of newly established entities.

Authorities developed under generic legislation have the advantages of being able to function along commercial lines, but are handicapped in the extent of the authority they can exercise as regulators. Thus, they are better suited to function as lead operators or service providers, rather than as regulators.

A "coordinating" committee in lieu of a formal authority may be a good way of bringing all concerned agencies to the table and communicating with one another, which is a weak link in most governmental systems. Having the senior leadership of each agency involved and participating in committee meetings is immensely helpful in the design of individual agency work plans. A committee, however, cannot sustain its activities for long if it has been established merely to satisfy a requirement from a higher order of government or to access resources set aside for that purpose without an understanding or commitment toward making the coordination meaningful, by impacting the investment decisions of the respective agencies represented on the committee. Much depends on the interest, enthusiasm and political skills of the person leading a committee. If the chair shows little interest in making committee meetings meaningful and constructive, the arrangement will soon weaken. The effort in Hanoi to set up a steering committee as a precursor to an independent authority is detailed in Box 1.

Multiple jurisdictions agreeing to set up a regional coordinating entity is a positive development, but is only a first step. There can be difficulties if such institutions do not have a comprehensive responsibility and decision making clout, such as AMCO not being responsible for the regulation of BRT in the Pereira region of Colombia. It makes it difficult for such an agency to implement effective coordination.

Thus, it appears that the best arrangement is for an entity to be created through dedicated legislation. Drafting such legislation and having it passed into law takes time. The committee arrangement is good as an interim measure, to get the ball rolling. It would be advantageous if a clear road map could be developed to transition the committee arrangement into a new authority model via dedicated legislation.

IV.2 Jurisdiction of the lead institution

The jurisdiction that lead institutions cover varies from city to city. In some cases, such as Ahmedabad and Singapore, it is limited to one municipality, for the most part because the given municipality's boundaries encompass a large area – in Singapore, the entire nation! In other instances, for example in Pereira, it involves two or more municipalities. In others, such as Vancouver, it covers a larger metropolitan area encompassing several adjoining cities. In the case of Paris, STIF's jurisdiction consists of 1,284 municipalities. In India, the UMTAs cover the main city along with some adjacent satellite cities. In Lagos, LAMATA's jurisdiction extends throughout the entire Lagos metropolitan area.

Growth in some urban populations has resulted in agglomerations that extend across several municipalities. Residents are not limited by administrative boundaries in deciding where to live or work. Therefore, travel needs often take them across municipal boundaries. Even though the municipality is often the investment and policy decision-making unit,

Box 1: Setting Up a Public Transport Authority in Hanoi, Vietnam

One of the recent examples of establishing public transport authorities is a commitment by the Hanoi People's Committee to set up a public transport authority as a multimodal organization responsible for strategic policy, planning, and investment priority setting. A number of mass transit systems are in some stage of development by a variety of national and municipal agencies. These are in addition to regular buses provided by the City and the national railways. Each of the public transport systems, however, are being planned and/or operated by a different national and/or city agency, potentially resulting in inefficient duplication and a waste of resources. Discussions to create an integrated public transport authority have been under way for more than three years. The vested interests of agencies supporting rail and bus transport are somewhat divergent, so it remains unclear how much longer it will take before an integrated authority can be established. In the meantime, BRT and a metro line are expected to go into operation within the next eighteen to twenty-four months, thus making it critical to address common functions related to an integrated, multimodal public transport system, especially focusing on integrated fare policy setting (i.e., structure and levels, treatment of multimodal trips), integrated fare collection (technical approach and procedures, organizational responsibilities, revenue management), and integrated services (changes to the local bus system network to extend access to BRT and urban rail beyond immediate station areas, reduction in duplication, needs for location and physical transfer facilities).

In response to immediate needs, one of the options being discussed is to set up a steering committee to provide policy guidance on all strategic matters related to integrated public transport. For the committee to be effective, it should be chaired by a representative of the People's Committee and consist of all city and national agencies with direct involvement in Hanoi's public transport–related functions. The key here would be for the committee to develop a time-bound road map to institutionalize and firmly establish the lead agency.

there is a need to coordinate across adjacent municipalities in planning public transport networks to ensure a consistent set of policies and investment (e.g., public transport coverage, fares, major arterial roadway capacity) across municipal boundaries. Though some functions like parking, traffic management and land use planning are historically local, municipal prerogatives, they are best handled on a metropolitan basis.

The basic principle in determining the jurisdiction of a lead institution for transport is the need to serve the origins and destinations of residents spread throughout multiple municipal

jurisdictions. In the largest cities, the need for intercity travel is typically lower, but even in such cases adjoining jurisdictions need to be well connected by a common transport system.

From a transportation planning perspective, a larger jurisdiction offers economies of scale that do not necessarily exist for other urban infrastructure needs, e.g. the need for a critical mass of planning expertise. Therefore, as in France, smaller cities may plan for a common lead agency to manage the metropolitan-level public transport system while the city itself manages infrastructure, such as minor roads, drainage, parking, streetlights and local buses. Thus, the jurisdiction for a lead agency is determined by what constitutes a reasonable economic size for major arterial roadways and public transport systems which are used by travelers making trips that cross jurisdictional boundaries. This accounts for some of the variation seen across cities.

IV.3 Functions performed by the lead institution

There are two major questions that arise when looking at the range of functions of lead institutions:

- Is the lead institution responsible only for public transport or is it responsible for a comprehensive set of urban transport actions, including those related to the roadway system?

- Is the lead institution responsible only for planning and organizing urban transport services or does it also have an active role in the operation of services?

Among the cities studied, STIF in **Paris** is only responsible for public transport. STIF is in charge of organizing, coordinating, modernizing and financing public transport. It formulates the urban mobility plan, determines the routes, contracts with the operators, sets the operational, management and financing guidelines, and ensures the coherence of investment programs.

It also sets the transport tax (VT) rate, decides on fares policy and oversees school transport, transport on demand and regular passenger boat transport. Managing parking is not among its responsibilities as local mayors set the rates and collect the proceeds. The central government is responsible for national highways within the metropolis. Driver licensing and vehicle registration are other responsibilities that also come under the central government. The respective cities that come within STIF's jurisdiction are responsible for providing the remaining infrastructure and services, such as minor roads, parking, traffic lights, and so on.

In contrast, in **London, Singapore, and Vancouver,** the lead institutions' responsibilities are more comprehensive. The situation in Lagos is mixed. LAMATA is primarily responsible for public transport, but also has an expanded role through its responsibility for an identified set of so-called "declared" roads (declared roads are mainly the major arterial roads used for public bus transport operations).

In all the cases studied, the lead institution has overall responsibility for strategic planning as well as public transport service planning. With regard to the other functions, however, the patterns vary. The lead agencies in London, Paris, Singapore, and Vancouver are not responsible for safety regulation. Thus, responsibility for issuing driver licenses and

motor vehicle registration rests elsewhere, generally with the traffic police. In Singapore, LTA does not fix public transport fares. Instead, a separate entity, the Public Transport Council (PTC), oversees this.

The lead institution is not directly responsible for the actual operation of public transport services in most cases, but oversees the operation and management of common transport facilities. In Singapore, LTA owns and operates the interchange facilities and intermodal terminals. The transport services themselves, however, are operated by two private companies contracted to run the metro and bus systems. In London, common facilities are operated and managed by Transport for London (TfL) or its subsidiaries. The metro system is operated by a TfL subsidiary, whereas bus services are contracted to private operators. In Vancouver, the bus systems and the light rail system are all operated by separate subsidiaries of TransLink. In Paris, the public transport system, including the common facilities, are operated by the publicly owned RATP (*Régie Autonome des Transports Parisiens*). Thus, the pattern adopted for the operation of services varies from city to city. Some of the municipalities in Paris have their own local bus systems that do not generally cross municipal boundaries.

The relationship between the lead institution and public transport service operators has been evolving. The trend since the 1990s has been to separate the service planning function from actual operations. The rationale for this is that the planning function is performed in the public interest—that is, serving a common public good—while service operations are performed by entities with a commercial interest. Thus, the emerging trend is for a public entity to plan services and then contract them, through a competitive process, to operating companies. The nature of operating companies varies, ranging from private sector, public sector, mixed, and monopolistic to a competitive arrangement. Thus, for example, in Vancouver public transport operations are carried out by multiple subsidiaries of TransLink, in Paris by a publicly owned operator, and in Singapore by two private operators. In London, metro rail services are provided by London Underground Limited, a TfL subsidiary, while bus services are franchised to private operators by TfL.

In **Lagos**, LAMATA, as the lead institution, is primarily responsible for coordinating transport policies, programs, and actions of all transport-related agencies in the metropolitan area, regulating and awarding concessions to bus operators along BRT routes, maintaining a core road network, and controlling parking and route planning, including the location of bus shelters, and pedestrian walkways and bridges. LAMATA also levies and collects transport user fees and operates a transport fund with dedicated funding from the Lagos state budget to meet its own operating expenses and make investments.

In contrast to independent lead agencies in some of the case study cities, in other places government continues to play a lead role in strategic planning. Recognizing the need to implement comprehensive plans that are spatially and hierarchically integrated, some governments have created separate entities within a municipality or provided the basis for contiguous municipalities to cooperate in the delivery of specific services.

Ahmedabad represents a municipality undertaking the strategic planning function. Responsibility for preparing the comprehensive development plan for Ahmedabad city rests with the Ahmedabad Urban Development Authority (AUDA), an agency of Gujarat state. In practice, AUDA delegates the development planning for Ahmedabad city to the Ahmedabad Municipal Corporation (AMC), which acts as the lead agency. The AMC prepares ten-year development plans, controls land use management, and parking and also plans and operates city buses and terminals through the Ahmedabad Municipal Transport Service. Traffic management and control and on-street parking are the responsibility of the police which are national but with a local branch. AMC has established Ahmedabad Janmarg Limited, a special purpose vehicle, for operating BRT service.

In **Colombia**, the constitution designates the municipality as the fundamental unit of local government. The individual municipalities develop comprehensive strategic plans and medium-term development plans for their area. As noted, municipalities can form an entity with a metropolitan scope by law, with two or more municipalities integrating around a core city to provide a cooperative mechanism for physical, economic, and social planning and coordination. The metropolitan area functions on delegated authority. Thus, Pereira has joined with the neighboring municipalities of Dosquebradas and La Virginia to establish the *Area Metropolitana de Centro Occidente*. By delegation, AMCO is the lead institution for planning and regulation of passenger transport in the metropolitan area.

The **Seoul** Metropolitan Government is the lead entity for urban and transport planning in the city. The city itself consists of twenty-five districts (gu), each of which has its own administration. The Seoul Metropolitan Government deals with area-wide policy and services, while district administrations implement these policies and provide self-contained services within the district. In 2005, the Metropolitan Transportation Association (MTA) was established by the Seoul city, Incheon city, and Gyeonggi provincial governments. The purpose was to coordinate intergovernmental transportation policies, infrastructure and facility investments, including bus route planning and fare collection for all inter-municipal transportation systems, and to resolve interregional transport problems in the Seoul metropolitan area. The association has no legal powers, as it functions through the cooperation and joint mandates of the three participating governments. The MTA consists of civil servants from the three participating governments and is funded by them.

In contrast, in **Chile**, the national government is effectively the lead authority in shaping entire metropolitan areas beyond what is undertaken at the individual municipality level. This is achieved at the sectoral level by the relevant ministries. The Ministry of Transport and Telecommunications is the lead entity for urban passenger transport, setting operational standards, issuing route licenses, and establishing tariffs. The Ministry of Housing and Urbanism is responsible for developing the comprehensive strategic plan covering multiple sectors, such as land use, housing, and so on. The Ministry of Public Works oversees construction and maintenance of major roads, while the national police enforce the traffic laws. Traffic management, traffic engineering measures, and parking are the responsibility of the individual respective municipalities. The existence of multiple ministries in influencing transport policies and strategies creates a duplication of responsibility and possibly a conflict of interest.

Each municipality in Chile develops its own comprehensive municipal plan, which should be consistent with the strategic plan developed by the Ministry of Housing and Urbanism. The metropolitan area of Santiago does not have a consolidated metropolitan administration and no institutional mechanism through which the municipalities of Greater Santiago can work together. Any cooperation, including, for example, on projects or activities of mutual benefit, is entirely on a voluntary and bilateral or multilateral basis. Fragmentation and overlapping of administrative jurisdictions and mandates have been an ongoing source of problems for citywide urban transportation and other initiatives. Transantiago is a project developed within the Ministry of Transport and Telecommunications to implement the transformation of the urban bus sector in the Greater Santiago area. Transantiago remains, effectively, an operations office within the ministry.[1] Since 2007, all metropolitan bus transport in Santiago has operated under the Transantiago system.

The responsibilities of the lead institutions in each of the case study cities are detailed in Table 2.

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1 To date, no formal authority has been established for Transantiago. It has no seat within any department or division of the ministry and therefore reports directly to the minister.

Table 2: Functions Performed by Different Lead Agencies

City	Lead Agency	Strategic Planning	Transport Policy Planning	Fare Setting	Planning	
					Infrastructure Planning	Service Planning
Cities with a lead agency						
Lagos	LAMATA	✔	✔	✔	✔	✔
London	TfL	✔	✔	✔	✔	✔
Paris	STIF	✔	✔	✔	✔	✔
Singapore	LTA	✔	✔	✘	✔	✔
Vancouver	TransLink	✔	✔	✔	✔	✔

✔ Means this function is performed by the lead institution , and

✘ means it is not performed by the lead institution

Thus, it is clear that the range of functions performed by lead institutions varies considerably. While in some cases there are no lead institutions, in others such lead institutions only perform strategic planning and service planning functions. In some cases, they are limited to only public transport, whereas in others they have a more comprehensive role, including major roadways of metropolitan-area or regional significance. In some places, the lead agencies have no responsibility for public transport operations at all, whereas in others they manage the common services, and in still others they directly operate all services. The details of functions performed by STIF in Paris and LTA in Singapore are described in Boxes 2 and 3.

Deciding on the most appropriate approach for a city depends on the existing governance structures in the country, legal situation and history. A common structure is not possible across all countries or situations. Having an autonomous lead agency at the metropolitan level with a high degree of comprehensive responsibility allows better integration of public transport across the full array of modes. In some situations, however, especially if there are several municipalities within a larger metropolitan region, individual city governments

Driver Licensing / Vehicle Registration	Traffic Management and Enforcement	Infrastructure Construction and Maintenance	Common facilities (terminals, bus stops, depots)	Public Transport Operations	Jurisdiction
✘	✘	✘	✘	✘	Lagos metropolitan area
✘	✔	✔	✔	✘	Greater London
✘	✘	✘	✘	✘	1,284 municipalities
✔	✔	✔	✔	✘	All city-state
✘	✘	✔	✔	✘	Greater Vancouver region

may be unwilling to relinquish responsibility for the provision of infrastructure, especially for roadways and parking, to a regional entity that has a geographically larger jurisdiction. Even so, it remains possible for individual municipalities to agree to cooperate by delegating delivery and operation of certain systems, e.g., metro, BRT.

It is useful to recognize that such institutions are not static in nature, but are dynamic entities. The importance of different functions would, therefore, change as the city moves from early stages of development to more mature stages. Early on, the dominant functions may be planning and construction of infrastructure, while at a more mature stage, such functions as the operation and management of public transport, including management of service contracts, and traffic management may dominate. Thus the structure and responsibilities of lead agencies may evolve over time.

In the U.S. metropolitan (transport) planning organizations, MPO's, began as informal coordinating bodies in the late 60's and early seventies, but added real decision- making authority for increasing growing amounts of Federal urban transport grant money in the decades since (see Box 4 for details).

Box 2: Lead Agency in Paris

France is a centralized country, with more than 36,000 towns and villages and four administrative levels: state *(l'état)* or national government, region (region), county *(département)*, and village *(commune)*. It began a process of decentralization in the 1980s, and in accordance introduced a framework law in December 1982 effectively decentralizing transport functions. Some 280 organizing authorities for urban transport were set up by locally elected representatives of one or several towns, with control over defined urban boundaries and the ability to levy the *versement transport*, or transport tax to both support the work of the authority and make investments.

The 1982 framework law was not applied to Paris. *Syndicats Transportes* Îles-de-France (STIF), a single authority in charge of public transport, had been created in the capital in 1959, and was at the time called the *Syndicat des Transports Parisiens*. STIF is today a regional public transport authority—a syndicate of local authorities—composed of the Île-de-France region (the Paris region), the city of Paris, the 7 *départements* of the Paris region, and other partners. Its main objective is to organize public transport (i.e., road, light rail, heavy rail), determine fare policy and service quality, establish routes, choose operators, monitor investments to upgrade and extend the network, set operational technical standards, and manage the employment tax . It is also responsible for developing an urban mobility plan (urban transport perimeter). Parking is the responsibility of municipalities, and driver licensing and vehicle registration are the purview of the central government.

Transport services are provided by three operators: *Régie Autonome des Transports Parisiens* (RATP), a public transport company with a monopoly on metros and buses in Paris; SNCF (national railway company) , the national and public railway company serving as the sole operator of railways services in the country, including suburban trains in Paris; and the Association of private bus companies (OPTILE) , an association created in October 2000 encompassing all private passenger transport operators (mainly bus operators in the suburbs in the Paris region that provide local bus services which rarely cross jurisdictional boundaries). The seventy-two members of OPTILE include small as well as major companies, among them Veolia – Transdev and Keolis.

The bus routes run by operators of the OPTILE network are subject to an administrative scheme supervised by STIF. Since 2003, STIF has organized the bidding processes for new services in the suburbs. As part of the ongoing reforms, STIF now controls and manages bus depots and maintenance facilities, while ownership and management of infrastructure assets are being passed on to RATP.

Box 3: The Land Transport Authority, Singapore

The Land Transport Authority (LTA) is the primary agent for land transport development and policy setting in Singapore. It plans the long-term transport needs of the city, overseeing all road uses, including private and public transportation. The authority's functions include the following:

- Formulation of land transport policies; integration of transport planning with land use (working closely with town and land use planners from the Urban Redevelopment Authority, Housing Development Board, and Jurong Town Corporation to ensure that roads and other transport systems, such as new rail lines and bus routes, are well planned and properly integrated with urban, residential, industrial, and commercial developments)

- Planning, design, and development of rapid transit systems (RTS) and road infrastructure systems (focusing on system integration and technical design details of roads, tunnels, pedestrian overhead bridges, and other structures and management of construction for new RTS projects and extensions as well as upgrades of existing rail lines)

- Management of road traffic and maintenance of related road infrastructure and systems

- Promotion and regulation of public transport (imposing, monitoring, and measuring minimum operating performance standards for bus and rail services in terms of service quality, safety assurance, and equipment performance)

- Regulation of private transport ownership and usage

- Centralized bus network planning

LTA assists the Public Transport Council (PTC), established in 1987, in the regulation of bus and rail fares and bus services. Beginning in 2009, LTA assumed the role of central bus planner. Thus, the PTC is empowered to license bus operators and enforce penalties as provided in the Public Transport Council Act while LTA acts as agent and technical advisor, assisting the PTC in actively monitoring and tracking the provision of bus services and bus service standards.

Regulation of Taxi Services: The taxi industry is liberalized and operates under the Taxi Operating Licensing framework, which is regulated by LTA. Taxi fares were deregulated by the PTC in September 1998, and taxi companies have the flexibility of setting fares based on the demand and supply of taxis.

Traffic Enforcement: Traffic management and enforcement are conducted jointly by LTA and the traffic department of the Singapore police force. The primary responsibility of the traffic police is to enforce traffic laws and to investigate road accidents while LTA takes charge of enforcement against illegal parking and vehicle-related offenses and helps draft traffic safety legislation.

In 2010, LTA acquired TransitLink, allowing it to offer an integrated fare collection system for the bus network and MRT and LRT systems.

Box 4: Evolution of Urban Transport Institutions in the U.S.

The history of urban transport institutions in the U.S., is closely linked to the delivery of Federal financial assistance to state and local government for highway infrastructure and public transport. Though the U.S. Federal or central government provided funding for a national road in the early part of the 19th century, the genesis of the major Federal financial assistance programs was the Interstate highway Act of 1956.

The original intent of the Interstate Program, conceived in the 30's and 40's, was for the Federal government to finance a system of high performance and quality highways connecting the largest cities (over 50,00 population in the U.S). The Interstate Highway System's functions and structure were first described in detail in a Congressional report, *Interregional Highways* published *in 1944*. As Edward Weiner, long term USDOT senior policy official put it in his book, the History of Urban Transport Planning in the United States,

 "The importance of the system within cities was recognized, but it was not intended that these highways serve urban commuter travel demands in the major cities. As stated in the report ...it is important, both locally and nationally, to recognize the recommended system...as that system and those routes which best and most directly join region to region and major city to major city".

The Interstate Highway Act of 1956 designated a systems of about 65,000 Km of limited access highways and created the Highway Trust Fund with a dedicated Federal gasoline tax to finance it. The Interstate Highway System was to be constructed by the states to standards developed by the states and the Federal Government acting together.

By 1962, reflecting a number of additional studies and the reaction of transport and urban planning professionals and big city mayors, the Federal-Aid Highway Act of 1962 called for the Department of Commerce (the USDOT was created in 1967):

"to cooperate with the states in the development of long-range highway plans and programs which are properly coordinated with plans for improvements in other affected forms of transportation and which are formulated with due consideration to their probable effect on the future development of the urban area..."

The Act also stated that "After July 1, 1965, the Secretary shall not approve under section 105 of this title any programs for projects in any urban area of more than fifty thousand population unless he finds that such projects are based on a continuing, comprehensive transportation planning process carried out cooperatively by states and local communities in conformance with the objectives stated in this section."

Thus the urban portion of the Interstate System was to be implemented by a plan cooperatively developed by State and local officials. For the most part, early implementation of this provision was done by informal "coordinating committees", made up of local officials and usually chaired by a senior state official. All aspects of these committees, from membership to functions and procedures were left up to the states working with local officials on the basis of a memoranda of understanding.

The Federal Transit Act in 1964 created a Federal public transport assistance program. This program and subsequent Federal Transit legislation called for financial assistance to be provided to a public sector recipient, designated by the state Governor and local officials from the respective metropolitan area. For the most part, these have evolved into public transport authorities covering all applicable modes and the entire geographic area of the respective metropolitan area.

There had been some form of public transport agency, either a department within city government or independent authorities, in the largest cities of the U.S. since the early 20th century (e.g. the Municipal Railway in San Francisco from 1912, the Metropolitan Transportation Authority in Boston and the Chicago Transit Authority both from 1947 and the New York City Transit Authority from 1953) but by financing public takeover of failing private transit companies, the Federal transit Act enabled/forced the creation of some type of dedicated public transport agency virtually everywhere, in all size cities across the U.S.

A USDOT was created in 1967, combining Federal highway (from the Department of Commerce) and transit (from the Department of Housing and Urban Development) function. This enabled easier implementation of the seminal Federal-Aid Highway Act of 1973. This legislation, for the first time, allowed funds allocated to the states for highways to be used for public transport in metropolitan areas.

This and other Federal legislation, as well as a number of Congressional and other studies and conferences led to the USDOT's joint Federal Transit Administration/Federal Highway Administration "Urban Transportation Planning Regulations" issued in 1975. These called for Federal urban transportation financial assistance for any type of project, highway or public transport, to be limited to those which were consistent with the multimodal strategic plan and short range transport improvement program prepared by the "metropolitan planning organization" for the respective metropolitan area. How these newly empowered institutions, known as MPO's were constituted, their voting procedures and staffing were left to the respective state and local officials. MPO's were to be partially financed by small percentage "takedowns" from the Federal highway and transit programs.

Over time, MPO's have evolved in two major ways, one which increased their authority and the other which broadened their purview. First, more and more Federal funding decision making authority has been vested in them, as flexibility of how Federal highway and transit funds could be used increased. Second, more and more considerations were added to the planning process by both transport and related federal legislation. Over time, these have included clean air and water, climate change, mobility for those with physical and other disabilities and over-all sustainability.

Finally, it should be noted that from the very beginning of the Federal Government mandates for multi-modal, integrated metropolitan planning and public transport authorities, it also financed extensive research, technical assistance and capacity building necessary to make them viable and effective.

IV.4 Personnel profile

The staffing needs of lead institutions vary considerably based on the precise functions it performs and the mechanisms in place for executing them. The manner in which the agency performs is an important issue that should be addressed when creating the institution. Of particular importance is whether it should do everything in-house or whether it should outsource some functions to other entities on assignment or contract.

In some cases, public transport services are operated by direct publically owned subsidiaries of the lead agency, and the entire workforce is designated as the staff of the lead agency, such as for metro rail services in London. In other cases, operations are handled by entirely different entities, with the lead agency only determining the service parameters—e.g., routes, schedules, fares—such as in Singapore and Paris as well as in London for bus services.

TfL's 2012 annual report cited staff strength of 22,452. This figure, however, included the personnel of all subsidiary operating entities, among them London Underground Limited and Victoria Coach Station plus several others providing different services. TfL itself has a staff of 3,767.

During fiscal year 2011, LTA in Singapore had a total of 4,361 personnel, 42 percent of them professional staff and 33 percent technical support staff. Similarly, the 2011 annual report for Vancouver's TransLink tallied some 6,800 employees, which included the staff of its subsidiaries. In contrast, in Paris, STIF employs only 330 people, and in Lagos, LAMATA is a very lean organization, with only about 35 professional staff. UMTAs in India generally have no dedicated staff, as they are constituted as senior official committees and are provided secretariat support by an existing government department or agency.

The key difference in the human resources available to different agencies is explained by the variations in how staff operating the respective public transport systems are accounted for. In London and TransLink, those employed in subsidiaries are recorded as employees of the lead agency, while those employed by private operating concessionaires are not. The Singapore transport system has a relatively small dedicated work force compared to London and Vancouver because all operators are private, and their employees are thus not designated as staff members of the lead agency. Yet, the employee figure for Singapore is relatively high compared to Lagos and Paris because a large number of LTA employees are involved in oversight of its rail-based mass transit systems. In Paris, employees of the operating companies are also not treated as staff of the lead agency.

In contrast, the full-time staff members at Ahmedabad Janmarg Limited are municipal employees on assignment to AJL. They receive regular public service salaries and are part of the Ahmedabad Municipal Corporation career structure. All staff members have two-year contracts (except for the general manager, who is also a deputy commissioner at the AMC). This is not, however, how the setup was envisioned.

In some cases, when positions were advertised, there were no applicants, or at least no suitable applicants for a job; some positions were advertised on more than one occasion. In other cases, AJL went through the process and made a job offer, but the

applicant declined it. One of the difficulties with attracting people could be the differential between public and private sector pay and the inability of the municipality to offer competitive salaries.

As demonstrated by the case study cities, there is great variety in the size of lead organizations. The key to determining staff size is the extent of direct responsibility the organization has for managing and operating services and thus the range of its responsibilities. The more it functions as an arms-length coordinating and planning entity, the less staff it requires.

How would a new agency acquire needed human resources?

Hiring adequate staff can be difficult because urban transport as a distinct profession is a relatively recent development in most developing countries. As a result, the number of professionals specializing in this area remains relatively small. The subject is complex, and standard academic curricula tend only to produce expertise in one or another aspect of it, such as civil engineering, transport economics, environmental engineering, transport planning, traffic engineering, land use planning, and so on. The wide range of skills required for comprehensive planning typically result from years of experience, not simply a graduate's knowledge base immediately after leaving academia. It is necessary, therefore, to look at possible ways of securing specialized personnel:

● Training and skill enhancement of existing staff

● Hiring from the market and exposing new hires to a wider range of skills than in their academic backgrounds

● Launching appropriately designed master's degree–level programs to create a pool of potential workers

● Creating systems and facilities to keep the knowledge base up to date

IV.5 Management structure and accountability

The management structures of lead institutions vary to an extent, but in general, they consist of a decision making board that is supported by a full-time CEO and a technical entity or secretariat. The mayor of London chairs TfL, and the deputy mayor is responsible for transport and serves as the deputy chair. In addition, fifteen other members, drawn from a range of interest groups, lend professional strength to TfL. Under the board sits a full-time commissioner for transport who heads the TfL secretariat. He or she is supported by six chief officers responsible for finance, legal matters, planning, marketing and communications, London Underground, and surface transport (primarily bus services).

In Singapore, LTA is governed by a fifteen-member board that includes a chair and the LTA chief executive officer (CEO), who heads the secretariat, comprised of several group directors and subordinate functionaries. There are separate divisions for engineering, corporate services, vehicle and transit licensing, information technology, policy and planning, communications, safety and contracts, road operations, and transport and ticketing

technology as well as projects. Three subsidiaries under LTA also deal with ticketing and consultancy services.

TransLink's board consists of nine directors, each appointed to six-year terms by a mayors council, composed of all the mayors of metro Vancouver. A CEO, in charge of day-to-day operations, is appointed by the board. At the operating level, TransLink is divided into bus, rail, and roads and bridges divisions, each with several operating subsidiaries for their different services.

STIF has a twenty-nine-member board comprised of 15 representatives from the Region, 5 from the city of Paris, and one from each of the 7 departments within the region. There is one representative of the cooperation entities set up by the towns and villages of the region, and one representative of the private companies paying the transport tax (VT). A representative of other stakeholders (labor unions, employers' organizations, consular institutions, users associations and municipalities taking part in the financing of transport services in the region) sits on the board but does not have voting power.

LAMATA has a thirteen-member board of directors. The board, appointed by the governor of the State, is representative of the authority's stakeholders, consists of representatives of transport operators, transport unions in Lagos state, the organized private sector, the general public, local government areas, and transport-related Lagos state government agencies. The only full-time member is the managing director/chief executive officer (MD/CEO), who heads the secretariat.

Thus, the typical broad structure of the lead agencies consists of a supervisory body or policy board, which is where key decisions are made. This governing body is supported by a technical secretariat, or unit, headed by a full-time professional. The size and functional style of the different entities vary.

IV.6 Financing arrangements

The two primary questions regarding the financing of lead institutions are as follows:

- From where does the lead agency obtain its financial resources—direct government grants, taxes, commercial functions, or a combination of the above?

- How much funding should the lead agency have control over—just enough to meet its own administrative costs and the costs of some studies and research or a larger amount that would enable it to actually make capital investments and subsidize the operating deficits of on-going services?

In London, TfL receives grants from the UK Department of Transport that consist of two components: a grant to finance its investment program and a general grant to be used for operations, including its own. TfL then distributes these funds among its operating entities. In 2011–12, TfL received £4,727.5 million by way of grants. In addition, it received £4,180.9 million by way of other income, of which 78 percent came from fares, 5.4 percent from congestion fees, and 3.1 percent from advertising. The rest of the other income was derived from a host of other smaller sources. It paid £2,155.6 million to its subsidiaries to meet their operational costs.

In Singapore, LTA's budget for financing the capital cost of projects is funded primarily by grants from the government (see Fig. 2). In addition, it has an operational budget funded through a "management fee" that it receives from the government and certain other revenues that accrue to it, such as vehicle registration fees, advertising fees, and fines.[2] During 2010-11, LTA received a total income of S$1,051 million, of which 38 percent was from management fee from government, 11 percent was other administrative fees (e.g., vehicle parking certificate fees, vocational license fees, vehicle inspection fees, RTS license fees), and 51 percent was a grant from government toward operational expenditures.

Figure 2: Revenue and Expenditure, Land Transport Authority, Singapore (2010/11)

Management fee from government 38%	Administrative fees 11%	Grant from government 51%

$1,051 million

Depreciation 40%	Staff remuneration 19%	Operating expenses 41%
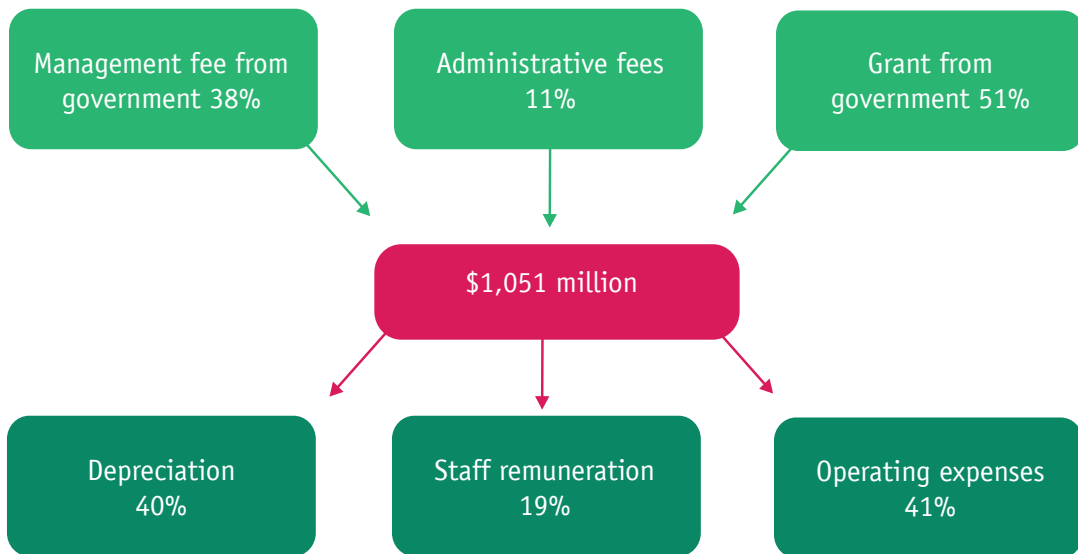
Source: Land Transport Authority, Annual Report, FY 2010/2011. Notes: Income from administrative fees includes vehicle registration fees, advertising fees, fines, sale of vehicle units . Operating expenses include road maintenance, street lighting, LTA property maintenance, interest on loans raised by LTA, and repayment of loans from government

The management fee from government along with the various administrative fees collected by LTA goes into the land transport revenue account. The monies from this fund are used to defray operating expenditures, such as staff remuneration, road maintenance, street lighting, maintenance of LTA property, interest on loans raised by LTA, as well as the repayment of loans from the government.

The government funds the development and construction of roads, expressways, rail infrastructure, and commuter facilities and retains ownership of roads and road-related infrastructure. LTA, however, has ownership of the rail system and licenses its operation to a private operator, which has to meet the operating cost of running the system and make provisions for asset replacement through fare revenue without operating subsidies from the government.

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2   *The management fee funding is based on a formula agreed to by the Ministry of Transport and is reviewed on a periodic basis to ensure that LTA remains sufficiently funded to carry out its core functions and responsibilities.*

In addition, on behalf of the government, LTA collects various vehicle taxes, including additional registration fees, road taxes, certificate of entitlement premiums, and electronic road pricing fees. The revenue collected goes to the Ministry of Finance, so it does not contribute to LTA's revenue or fund its transport projects. Capital costs of project expenditures for public transport infrastructure are mainly funded via development grants and advances from the Ministry of Transport.

TransLink has been authorized by the respective Vancouver jurisdictions to collect a fuel tax, property tax, and parking sales tax for use toward transport investment and operating costs. In 2007, the GVTA Act was amended to empower the TransLink board to increase property taxes by 3 percent annually and transit fares 2 percent annually, without external approvals from the provincial government, mayors' council, or regional transportation commissioner. This authority is unprecedented in British Columbia's local government history.

During 2011, C$682 million were collected, out of which C$312 million was derived from the fuel tax, C$280 million from the property tax, and C$54 million from the parking sales tax. Another C$37 million came for smaller levies and taxes. Over and above these amounts collected as tax revenue, TransLink also received some C$196 million as a transfer from the government of Canada under various arrangements, such as a gas tax agreement. It took in C$432 million from transit fares. Smaller amounts were also collected through tolls and real estate earnings. TransLink's total revenue came to C$1,458 million. It spent C$1,439 million, of which C$761 million was used for bus-related expenses and C$321million for rail.

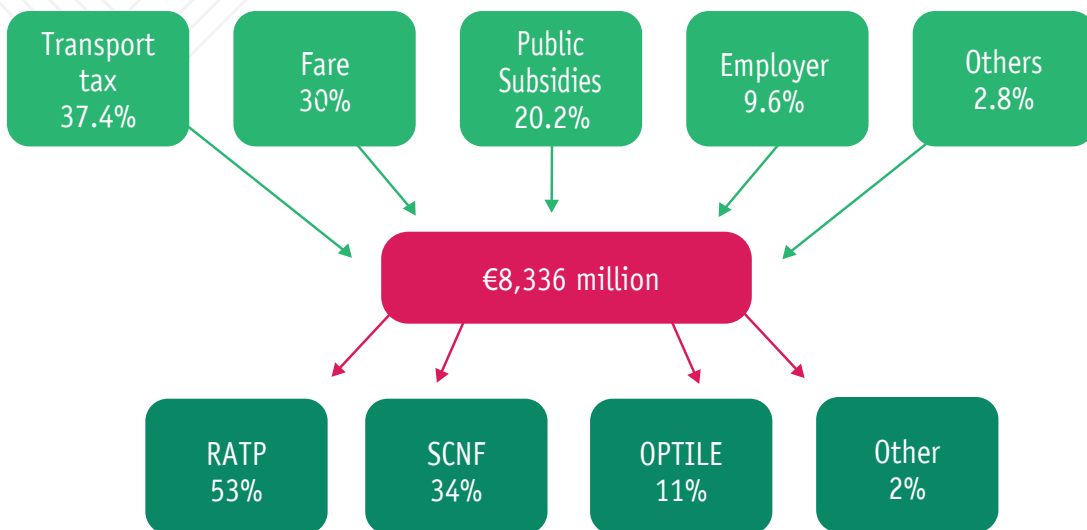**Figure 3:** Revenue and Expenditure, TransLink, Vancouver (2011)
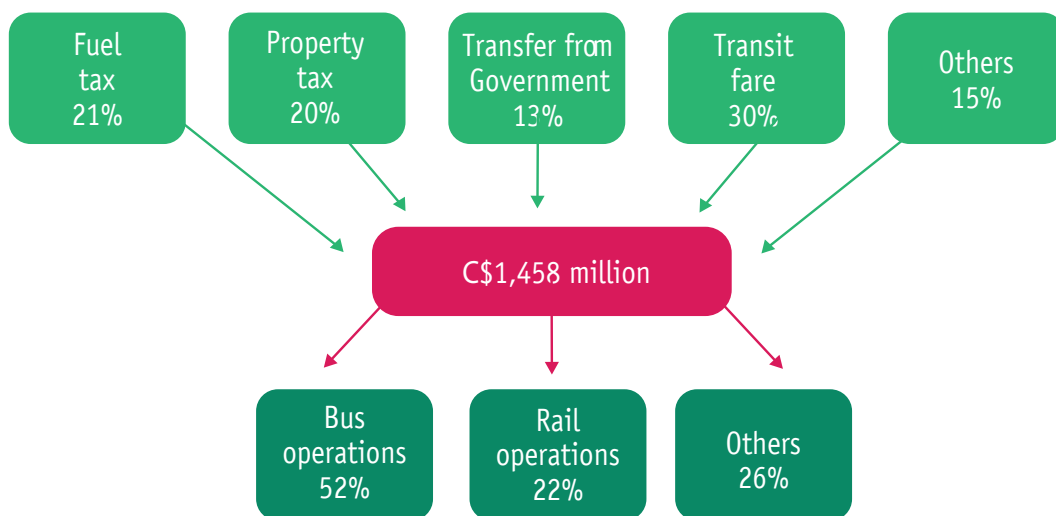
Source: TransLink, annual reports and financial and performance reports.

Other revenue sources include a hydro levy, parking tax, real estate interest, senior government operating contribution, and Golden Bridge tolls. Other expenditure categories include police and security expenses, bridge and Albion ferry, and administrative expenses.

In 2011, funding for public transport operations in the Paris region totaled €8,336 million. The sources of revenue include (please see Figure 4):

a) *Transport tax.* Transport tax (VT) was created in 1971 in Paris and generalized to the rest of the country in 1973. It is paid by companies and administrations located within the regional perimeter and employing more than nine people. The rates are decided by an organization of transport authority (AOTU), within the ceiling fixed by the central government. The percentage is applied to the total payroll. Three rates are applied in the STIF perimeter: 2.6 percent in the city of Paris and Hauts de Seine, 1.7 percent in Seine Saint Denis, and 1.4 percent in the other *départements*. The VT is the main resource for urban transport, a tax collected and used locally.

b) *Fares.* The STIF is in charge of setting the fares. Fares in Paris region vary on a zoning principle. Five zones exist (8 existed initially); zones 1 and 2 are in central Paris and the fare increases as one moves away from central Paris.

c) *Public subsidies.* Income from public subsidy include: statutory contribution from its members (€1,164 million, 69%), subsidies from state for school transport (€128 million, 8%), fare subsidies from the Regional Council (social action) (€142 million, 8%), subsidies from the *départements* (social action) (€188 million, 11%), and local authorities compensation for loss making services (€65 million, 4%).

d) *Employer.* Public and private employers in the region must reimburse their employees 50 percent of their urban transport season tickets. This scheme has existed in Paris for a long time and was generalized to the rest of the country in 2010.

e) *Others.* This includes advertising, proceeds of fines, etc. The government sets the amount of police fines (for traffic and parking) and collects them. In the Paris region, 50 percent of the proceeds from fines go to STIF, 25 percent to the *départements* and the rest to the Region.

Figure 4: Revenue and Expenditure, STIF, Paris (2011)

| Transport tax 37.4% | Fare 30% | Public Subsidies 20.2% | Employer 9.6% | Others 2.8% |

€8,336 million

| RATP 53% | SCNF 34% | OPTILE 11% | Other 2% |

Source: Syndicats Transportes Îles de France, 2011.

In Lagos, the law grants LAMATA powers to levy and collect user charges in connection with the provision of its services and to collect any other tariffs, fees, and road taxes as may be authorized by the governor. A transport fund was set up in 2006 with dedicated funding from the Lagos state budget provision, license fees (hackney permit, road taxes, license plate registration, and vehicle registration),[3] bus concession fees, and other road user charges (tolls). In discussions with the representatives of the thirty-six states, LAMA-TA successfully made a case for the federal Joint Tax Board to increase road user charges, to be shared among LAMATA (50 percent), the state treasury (40 percent), the Motor Vehicle Authority (5 percent), and state Ministry of Transport (5 percent). The transport fund has shown a steady increase since its inception in 2006 and in 2011 stood at approximately US$10 million.

Table 3 summarizes the funding sources for the lead institutions analyzed in the foregoing discussion. LAMATA, LTA, STIF, TfL, and TransLink wield a considerable amount of influence by way of the funds they control and manage. All five either receive grants from the government or collections from specific taxes dedicated to them or have been authorized to collect certain taxes directly to meet transport-related expenditures.

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3   *LAMATA is responsible for regulating traffic along a pilot bus franchise and BRT corridor and enforcing and monitoring franchise agreements. For providing this technical assistance, LAMATA charges an annual franchise fee that serves as an additional funding source for LAMATA activities and helps with cost recovery.*

Table 3: Source of Funding for Lead Institutions

City	Lead Agency	Source of Funds
Lagos	LAMATA	State budget; license fees (hackney permit, road taxes, license plate registration, and vehicle registration), bus concession fees
London	TfL	Congestion charges, central and local government general revenue
Paris	STIF	Dedicated employer tax; local, regional, department general revenue
Singapore	LTA	National (local) government general revenue (derived from auto registration, gas tax, parking, congestion charges)
Vancouver	TransLink	Dedicated gasoline, property tax, parking tax

It is extremely important to ensure that lead agencies have the financial muscle to actively fulfill their coordinating and facilitating role. It is this ability that enables them to exercise influence in discharging their coordinating role. While a legal mandate to coordinate between different agencies is helpful, it is the ability to set priorities and allocate funds that gives a lead institution the required influence and muscle to discharge its role effectively. Besides, financial incentives can be a powerful way of ensuring that desired institutional and policy changes take place. Several non-fare revenue streams, such as land value capture mechanisms and fuel taxes, can be tapped to finance such institutions.

IV.7 Evolution of the lead institution

The structure and form of different lead institutions have evolved over time in response to efforts by national and city authorities to improve the delivery of transport services.

Setting up a lead agency for urban transport generally requires bringing together different functions, being performed by different agencies, under one platform. This typically encompasses road and other transport infrastructure planning, operation of multiple modes of public transport, parking, transport licensing, and safety-related functions. Therefore, a certain amount of institutional restructuring may be required when setting up the lead institution. In some cases, instead of institutional restructuring, a lead agency might be created as a new entity and given responsibility for coordination, without really causing ripples in an ex-

isting institution. In such cases, they also tend to take on responsibilities for which no one was previously responsible. In other cases, existing institutions are restructured, reformed or even eliminated to allow a shift in responsibilities to the new institution.

One challenge common to all such cases is enabling the new institution to grow adequately and to be able to perform its expected role without hindrance from existing entities. Another challenge that is sometimes encountered, especially if cities are of very different sizes and importance within the larger jurisdiction, is reconciling the interests of the "star" city with those of the smaller ones. Often, there is a need for powerful and influential champions who are able to provide the support needed for these institutions to stabilize and perform well.

The process of evolution can be difficult and time consuming. It is often several years before institutions can stabilize and perform a meaningful role. Thus, the challenge is not just in establishing a lead agency, but also in ensuring that it is able to evolve into a respected and effective organization. The lead institutions of the case study cities have all evolved in their unique way over the years.

Singapore

The key policy challenge faced by Singapore in the 1960s and early 1970s related to inadequate transport and land use planning and integration. The attainment of independence in 1963, coupled with a vision for a massive urban renewal program, led to development of comprehensive land use and transport plans. Singapore's first integrated land use and transport plan was issued in 1971, mapping out the basic framework for physical planning along designated corridors. Alongside this, the Bus Service Reorganization Committee was set up in 1973 in an attempt to improve the laissez-faire conditions of that sector and to change the approach toward buses as a form of public transport. In short, this meant revamping the system from a free market of many players to a centrally planned operation with a restricted number of operators.

After decades of discussions and studies, the decision was made in 1982 to build a Mass Rapid Transit system, so the Mass Rapid Transit Corporation was formed to build and regulate it. The objective was to organize land use into high-density satellite towns surrounding the central catchment area with a transportation network connected through their centers. The Concept Plan of 1971 also included extensive development of road infrastructure from about 800 kilometers at the end of the 1960s to nearly 3,000 kilometers by 1990.[4] Focusing on the strategic long-term required paying attention to four areas simultaneously: planning integrated land use and transport, developing a quality public transport system, creating a comprehensive road network, and assessing demand management through private vehicle ownership and use controls.

In an attempt to integrate the planning, development, implementation, and management of all public and private infrastructure, the Land Transport Authority was created in 1995

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4   Ilsa Sharp, The Journey: Singapore's Land Transport Story (Singapore: Land Transport Authority, 2005).

with the merger of four government agencies: the Roads and Transportation Division of the Public Works Department, the Land Transport Division of the Ministry of Communications (now the Ministry of Transport), the Mass Rapid Transit Corporation, and the Registry of Vehicles. Their functions, prior to their merger, are highlighted in Table 4.

Table 4: Agencies That Merged to Form LTA

Agency	Roles and Responsibilities
Mass Rapid Transit Corporation	Responsible for the planning, building, and regulation of the MRT system
Roads and Transportation Division of the Public Works Department	Planned, designed, constructed, and maintained roads, pedestrian walkways, bus shelters, bus terminals, and interchanges, taxi stands, and so on
Land Transport Division of the Ministry of Communications	Developed land transport strategies and policies
Registry of Vehicles	Provided registration and licensing of vehicles and collection of vehicle taxes; administered, regulated, and enforced vehicle ownership, usage and safety policies, administration of vehicle quota system, and enforcement of rules and regulations under the Road Traffic Act and its subsidiary legislation

The formation of LTA signaled a paradigm shift in the approach toward land transport development that involved discarding the old approach of either adding transport improvements to serve existing building developments or doing transport and development planning (and decision-making) separately and instead integrating transport infrastructure and building development from the planning stage.

One of the greatest challenges to the successful formation of LTA as an organization was to help staff members overcome the artificial barriers they carried as employees of their former agencies. Facilitating the integration of staff and functions from the component agencies was a high priority.[5]

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5   *Interview with Maria Choy, group director of special duties, LTA, Singapore, March 15, 2012.*

To avoid rivalry and envy among staff members from the different agencies, one of the initial challenges in the formation of LTA was to rationalize differences in pay scales and skill sets, office culture, work patterns, and priorities of employees from the various agencies. LTA thus put in place a common salary scale and benefits package for all staff effective September 1, 1995. This involved foresight and planning prior to the physical establishment of LTA. Rationalization of the salary package across all agencies included undertaking mass job description and job-grading exercises to ensure that all workers were fairly compensated for their labor.

Prior to the physical establishment of LTA, "road shows" were held to engage the staff on various matters concerning the formation of the authority, including employee policies, such as salary and benefits. These measures helped to engender a culture involving a consultative approach, in which an effort is made to understand and address workers' real concerns before implementing major policy decisions.

Various forms of corporate activities were organized to help staff interact at work and in social settings. For instance, corporate retreats for management staff were used as platforms to establish a common language and help them understand how their work contributed to the organization's vision and mission. Team-building activities during retreats helped staff get to know each other on a more personal level and engender friendlier working relationships built on discussion and exchange.

The inclusion of MRTC at the formation of LTA proved to be beneficial as it provided the agency with a corporate services base. The other three agencies were departments under the ambit of their respective ministries and did not have a dedicated human resources (HR) or administrative function; instead, their HR functions were centrally managed by the ministries and the Public Service Division, which controlled recruitment, promotion, and placement of staff. Innovative schemes introduced by management—such as corporate social events and financial incentives for new suggestions—supported staff interaction and helped develop LTA's organizational culture and identity.

Fortunately for LTA, it did not have to compete with existing organizations already doing the work that it had been mandated to carry out. This was due to LTA being created by bringing together the entities that did the required work. Thus, its formation was a matter of institutional consolidation and restructuring, rather than setting up a completely new entity. The challenge of integrating staff members from different backgrounds required visionary leadership and a desire not only to establish, but to also stabilize LTA.

London

Prior to 1933, ownership and management of the transport system in London was distributed among a large number of independent and separate organizations. At that time, buses served much of what is now Greater London as well as areas in many of the nearby counties. Within Greater London, the bus network was supported by tram and trolleybus systems. Trams were withdrawn in 1952, and the trolleybuses a decade later. Buses replaced both services. The metro rail system, the London Underground, had been in op-

eration since 1863. It had been developed and was owned by the Underground Electric Railways Company of London (UERL) and the Metropolitan Railway. The tram and trolley-bus networks were owned by various local authorities and public companies, and buses were owned by numerous private companies. Many of these services were in competition with one another, leading to wasteful duplication. The London County Council managed tram operations within the County of London, but its responsibility did not extend to the bus or tram routes that ran outside its jurisdiction or to the railways, which also extended into neighboring counties. The evolution of lead agencies for transport in London can be divided into six phases.

1933–1948: London Passenger Transport Board

London's different modes of public transport were first brought together in 1933, under the control of the London Passenger Transport Board (LPTB), which was the lead agency from July 1, 1933, to December 31, 1947. It unified services in the London area for the first time. The London Passenger Transport Act of 1933 removed responsibility for 269 kilometers of tram route from the London County Council, three county boroughs, and a number of other local authorities in the Greater London area. It brought the UERL lines under the same control and took over supervision of buses from the Metropolitan Police. The LPTB's area of responsibility was far greater than the current Greater London boundaries and was known as the London Passenger Transport Area. The period saw massive expansion of the tube network and was directly responsible for the expansion of the suburbs. World War II brought a halt to the program, leaving some projects abandoned; others were completed after the end of hostilities.

1948–1963: London Transport Executive

The London Transport Executive (LTE) was the lead agency from January 1, 1948, to December 31, 1962. It was taken into public ownership and became part of the British Transport Commission, which brought London Transport and British Railways under the same control for the first and last time.

1963–1970: London Transport Board

The London Transport Board was the lead agency from January 1, 1963, to December 31, 1969. It reported directly to the Ministry of Transport, ending its direct association with the management of British Railways. During this period, many of Britain's unprofitable railways were dissolved. There was little investment in public transport, and the motorcar increased in popularity.

1970–1984: Greater London Council

The Greater London Council (GLC) was the lead agency from January 1, 1970, to June 28, 1984, and London Transport Executive served as the executive agency. Legislation authorizing the GLC had been passed in 1963, when the London Transport Board was created. Control, however, did not pass to the new authority until January 1, 1970. The GLC broadly controlled only those services that fell within the boundaries of Greater London.

1984–2000: London Regional Transport

London Regional Transport was the lead agency for urban transport from June 29, 1984, to July 2, 2000. The GLC was abolished in 1986, with responsibility for public transport having been removed two years earlier, in 1984. The new authority, London Regional Transport, came under direct central government control, reporting to the secretary of state for transport. The London Regional Transport Act contained provisions for setting up subsidiary companies to run the Underground and bus services, and in 1985 London Underground Limited (LUL), a wholly owned subsidiary of London Regional Transport, was established to manage the tube network. In 1988, ten individual line business units were created to manage the bus network. London Buses Limited was constituted to advance the privatization of bus services. London Transport was converted to a route-operating contract-tendering authority, and the former bus-operating interests and assets of London Regional Transport were split into twelve essentially private business units under the banner of London Buses. The units competed for contracts with private operators beginning in 1984 and were all sold off by 1994/95, becoming private operators themselves.

2000 Onward: Transport for London

The Greater London Authority, a replacement authority for the GLC, was set up in 2000, with a transport executive, Transport for London, taking control as the lead agency for transport on July 3, 2000.

Thus, a process of institutional reorganization that started in 1933, by bringing all modes of public transport under one umbrella, went through a long, evolutionary process culminating in the creation of TfL. From 1984 to 2000, responsibility for leading London's urban transport planning and management system fell to the national government, during which a major reform in the manner of providing bus services was carried out. Once this reform was completed, responsibility returned to local government.

Paris

Efforts to establish a body to coordinate public transport in Paris began in 1938, when the Committee of Parisian Transport was set up under a legislative decree of November 12. The committee was dominated by representatives of the national government. A reorganization carried out under Act 21 of 1948 led to the creation of the autonomous Transport Authority for Paris (RATP, Régie Autonome des Transports Parisiens) and the Regional Transport Office for Paris (ORTP). The latter succeeded the committee in January 1949. A decree from November 14, 1949, further reorganized passenger transport in Paris. At that time, the national government covered the deficits for the train services.

A decade later, Ordinance 59-151 of January 7, 1959, replaced the ORTP with the Paris Transport Union (STP, *Syndicat des Transports Parisiens*), which included representatives of the departments of Seine, Seine-et-Oise, and Seine-et-Marne in addition to the mayor of Paris. The STP was reorganized in 1968, adding more departments, including Seine-Saint-Denis, Val-de-Marne, and Val-d'Oise. In 1971, STP was entrusted with responsibility for overseeing the newly created transport tax, which became the prime source of funding for public transport in the

Paris region. In 1991, STP's jurisdiction was expanded to cover the entire *Île-de-France* region.

Under Law 2000-1208 of December 13, 2000, the *Syndicat Transportes* Île-de-*France* replaced STP and currently remains the lead institution for public transport in the region. The big change was the devolution of the leadership role from the national government to the region.

In 2005, the central government handed over its majority shares in STIF, thus creating a new administrative body consisting of local authorities at the regional and subregional (county) levels and comprising 1,284 municipalities with 11.5 million people. Thus, it required a long process of evolution for the public transport authority in Paris to stabilize.

Vancouver

Vancouver's public transport system dates back to 1897, with streetcar lines operated by the British Columbia Electric Railway Company (BC Electric), a private utility company regulated by the province of British Columbia. These services were expanded as the population of Vancouver grew from 1897 to 1930. By 1940, Vancouver had a well-established network of streetcars and interurban railways.[6] The provincial government acquired BC Electric in 1962 through legislation mandating the sale. The company was renamed the British Columbia Hydro and Power Authority (BC Hydro). The emphasis from 1960 to 1970, however, was on building highways, so the public transport network and services remained relatively stagnant.

Beginning in 1970, a series of developments moved the provincial and regional governments to consolidate and strengthen public transport services in the Greater Vancouver Regional District (GVRD). In 1971, the GVRD commissioned a report to examine rapid transit options for the area. The report recommended a complete restructuring of the regional bus system and that GVRD pursue a Light Rail Transit system, especially to serve the fast-growing suburbs.[7] In 1972, the newly elected provincial government heavily emphasized public transit in Vancouver and other communities. It created the Municipal Transit Bureau within the Ministry of Municipal Affairs to bring transit services funding into focus. In 1976, the transit system in Vancouver became part of the Bureau of Transit Services.

In 1979, the Bureau of Transit Services was abolished, and the Urban Transit Authority (UTA)—a Crown Corporation, a provincial government–owned company—was created within the Ministry of Transportation and Highways (MOTH). UTA's mandate was to coordinate the planning, marketing, and funding of municipal transit systems throughout the province. It envisioned providing local governments with an increased role in decision making and funding of their community transit systems. In 1980, the operation of the Vancouver and Victoria transit systems were transferred from BC Hydro to UTA, and in 1982, UTA was renamed BC Transit.

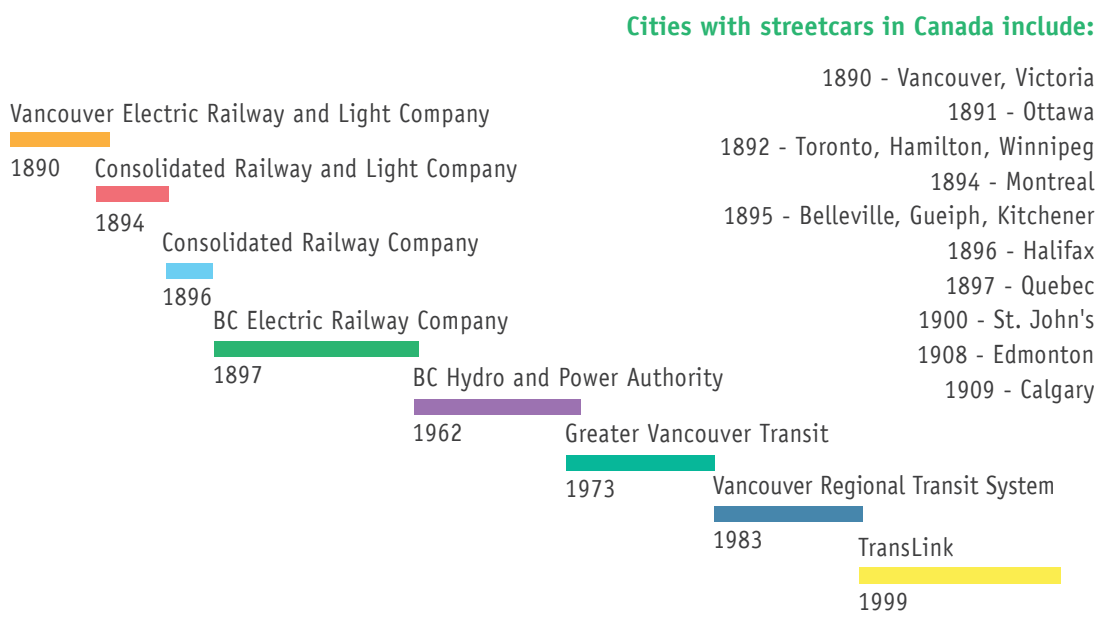6   GS Tram, "Vancouver, British Columbia: About 1940," http://www.tundria.com/trams/CAN/Vancouver-1940.shtml.

7   R. Kelly, "Report on Rapid Transit Options for Metro Vancouver," *Greater Vancouver Regional District, 1971.*

In February 1997, the GVRD board identified principles for negotiating the creation of a new regional transportation authority. The region sought local control over its transportation system to support its broader goals for population growth, economic development, and air quality set out in the GVRD's Livable Region Strategic Plan. The GVRD and the province agreed to negotiate, and the process began in earnest in February. They reached an agreement by September 1997.

In February 1998, the agreement between the provincial government and the GVRD to create a new authority was announced. On July 30, 1998, the British Columbia Provincial Legislature passed Bill 36, the Greater Vancouver Transportation Authority Act. On April 1, 1999, the Greater Vancouver Transportation Authority (GVTA), also known as TransLink,[8] was established and became the agency responsible for planning, funding, building, and marketing an integrated transportation system for the GVRD, now called Metro Vancouver. The legislation required that TransLink's transportation plans reflect GVRD goals.

The legislation creating TransLink provided a substantially broader scope and mandate for transportation planning and implementation in the GVRD compared to the situation prior to its passage. Figure 5 shows the progression from the Electric Railway Company to TransLink.

Figure 5: Vancouver: From the Electric Company to TransLink

Cities with streetcars in Canada include:

Vancouver Electric Railway and Light Company

1890   Consolidated Railway and Light Company

    1894   Consolidated Railway Company

        1896   BC Electric Railway Company

        1897   BC Hydro and Power Authority

            1962   Greater Vancouver Transit

                1973   Vancouver Regional Transit System

                    1983   TransLink

                        1999

1890 - Vancouver, Victoria
1891 - Ottawa
1892 - Toronto, Hamilton, Winnipeg
1894 - Montreal
1895 - Belleville, Gueiph, Kitchener
1896 - Halifax
1897 - Quebec
1900 - St. John's
1908 - Edmonton
1909 - Calgary

Source: V. Setty Pendakur, "TransLink Vancouver, South Coast British Columbia Transportation Authority: Evolution, Success and Challenges, 1970–2011," working paper, World Bank, Washington, D.C., July 2012.

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8   *As noted, in 1998, when GVTA was launched, it was known as TransLink. In this report, GVTA during the period 1998–2008 is referred to as TransLink, and after 2008 the South Coast British Columbia Transportation Authority (SCBCTA) is called TransLink.*

The GVTA was the first North American metropolitan transportation agency responsible for both major arterial roads and transit. The GVTA had the authority to create subsidiary companies and to enter into contracts for the delivery of transit, road services, and alternative travel programs to manage demand. By law, it was required to produce medium- and long-term strategic transportation plans to support the region's goals and to consult with the public and stakeholders as these plans were being developed. The GVTA Act required the authority to fund and operate transit services consistent with their strategic plans, which had to be approved by the GVTA board and ratified by the GVRD board.

Setting up such a transportation authority was a unique opportunity to consolidate transportation planning and implementation with an integrated approach at the regional level. The GVTA Act also provided various sources of revenue previously not available. Although the GVTA had full authority over property taxes and transit fares, the province retained the right to approve or reject any other TransLink taxes (e.g., a gas tax, parking tax, surcharge on electricity bills).

In November 2007, the British Columbia Legislature passed Bill 43, the Greater Vancouver Transportation Authority Amendment Act, which significantly amended the GVTA Act and changed the lead institution's name to South Coast British Columbia Transportation Authority Act (SCBCTA Act). TransLink began operating under the new legislation in April 2008.

Under this new mandate, TransLink extended its transportation service region north to Pemberton and east to Hope. Expansion of the service area was subject to entering into service agreements with municipalities. The SCBCTA Act requires TransLink to prepare a long-term (thirty-year) transportation plan, to be updated every five years, and a rolling ten-year plan, to be updated annually. TransLink is also required to consult with the public, governments, and stakeholders of the service region as these plans evolve.

The SCBCTA Act empowered TransLink's board to increase property taxes by 3 percent annually and transit fares by 2 percent annually without external approval (i.e., from the provincial government, mayors council, or regional transportation commissioner).[9] As noted earlier, this authority is unprecedented in British Columbia local government history.

In addition to expanding the agency's coverage area, the 2008 act also changed the composition and voting structure of the decision-making board to give more power to suburban jurisdictions and the Province.

Lagos

The Lagos Metropolitan Area Transport Authority (LAMATA) was created in 2003 to provide an overall vision and a strategic planning platform for addressing the long-neglected transport needs of the metropolis and to coordinate the activities of the different executing agencies to provide a common and consistent basis for implementation.

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9   *TransLink Annual Report, 2007, Annual Report and Statement of Accounts, 2007/08, 25.*

LAMATA was created by a state act, the LAMATA Law, signed on January 13, 2002, and formally enacted on December 2, 2003. The authority has overall responsibility for transport planning and coordination in the Lagos metropolitan area with the primary mandates of leading transport planning, and assisting in transport policy formulation and coordinating major operational and investment decisions and implementation. The law establishing LAMATA was strengthened in 2007 to include planning and regulatory functions across the various modes of transport.

Unlike the experiences of Singapore (where LTA was created from the merger of existing agencies), London (where TfL was established by replacing an existing organization), and Vancouver (where TransLink evolved over decades), that of Lagos was different in that LAMATA was created as an entirely new organization and given functions which, for the most part, were not being carried out by existing organizations. Political support for setting up LAMATA as a comprehensive planning and coordination body came from the state governor, as it served one of the political objectives of the his election campaign—to improve public transport service. The state provided initial financing with support from international financial institutions such as the World Bank.

The primary motivation for establishing LAMATA was the multiplicity of agencies, estimated in excess of 100, which had some bearing on urban transport and had led to inertia and extreme difficulty in implementing effective change. While LAMATA can be seen as a successful example of a lead agency responsible for strategic planning, its initial focus was on maintenance and rehabilitation of a much neglected "core" road network. LAMATA has been very effective in improving the road infrastructure at lower costs and more efficiently than the Ministry of Transport and Works.

During the initial period, when LAMATA was still trying to establish itself and gain support from the political establishment as well as the common public, its ability to deliver good roads earned it recognition and credibility as a professional organization. Its success made it possible to pursue some difficult policy reforms (for example, negotiating with bus operators, raising bus fares to improve financial sustainability of private bus enterprises, generating support for Public-Private Partnership projects , and preparing long-term integrated plans).

The critical lesson here is that when new institutions are created, it is inevitable that existing institutions will feel threatened. A challenge is to demonstrate good administrative skills and smart public policy early on to garner the necessary political support.

The origins of LAMATA are in the Lagos Mass Transit and Transport Systems Management Program Study (LMTS) of 1992, which identified the need for an authority to provide a single focal point for Lagos. In 1996, the Detailed Framework for Establishment of LAMATA (DFEL) was developed. As noted, the law to establish LAMATA passed in 2002.

LAMATA was founded with a clear vision and mandate, allowing it to focus from the outset on a specific mission. The Lagos Urban Transport Project (LUTP), which envisaged the construction of a BRT project and the creation and maintenance of a core road network, provided a work plan that was subsequently expanded as LAMATA became established.

In its initial years, LAMATA was perceived as a project implementation unit overseeing a donor-financed project. Motivated by a political champion (the state governor), however, and a technical champion (LAMATA's director), LAMATA was able to play a much larger role in strategic planning. Several major projects—including planning and construction of BRT-Lite, planning for construction of two rail lines, and road developments—helped seal its identity and role.

The Lagos Urban Public Transport Office (LUTPO), LAMATA's precursor, had been established in 2001. The LAMATA Law of 2002 can be viewed as having formalized and empowered LUTPO, transitioning it into becoming LAMATA. The development of LAMATA occurred in two stages, as noted, the first being its establishment in 2003, based on the 2002 law, the second being the LAMATA Act of 2007, expanding its mandate and authority.

Of great importance, LAMATA was able to offer remuneration packages at private sector levels, which allowed it to attract and retain high-caliber staff. The core of LAMATA was (and continues to be) a professional senior management staff with extensive experience in the transportation sector and excellent technical capacities who are contracted for a fixed period of time rather than being regular government employees. The CEO and many of the management team have had international experience, including at organizations such as TfL. The main teething problems were as follows:

- Overcoming resistance to change from existing agencies for a variety of reasons, including lack of awareness, overlap of mandates, reluctance to relinquish functions or responsibilities and jealousy over better LMATA working conditions and pay: LAMATA initiated a forum to work with all of the relevant agencies that allowed an exchange of information, gave the agencies an opportunity to become familiar with each other, built trust, and gradually helped to establish new working relationships.

- Overcoming resistance to change from private operators. Progress in this area was made through projects such as BRT-Lite and the pilot Bus Franchising Project which provided opportunities to both owners and labor. The majority of the industry, however, remains outside formal regulation or control.

- Dealing with a lack of quality, discipline, and professionalism among the local supplier community, including contractors and consultants

- Managing the expectations of the public

- Acquiring and developing qualified and experienced staff

- Achieving financial self-sustainability and reducing dependency on donor funding: this was later achieved by establishing a transport fund (financed by state budget and user charges)

- Surviving the political risks of changes in administration: this has been managed successfully, most notably with the BRT-Lite after the incoming governor continued to support the project, which began under his predecessor. (Mobereola 2006)

Lessons

It is evident, especially from the examples of London, Paris, and Vancouver that lead institutions take time to stabilize. The mere enactment of a law, issuance of an order, or agreement between cities is not enough in and of itself. It may take years before the right balance between expectations and possibilities is found. Many changes may be needed during this process of evolution, and it should not be discouraging if the first structure established is not found to be perfect.

The starting point in most of the cities studied above, sometimes going back to the 1960s and 1970s, was not very different from what one sees in many, particularly developing cities around the world today.

There was a predominance of unregulated bus operations, fragmentation of responsibilities among multiple institutions, and a strong bias toward capital expenditures. For example, the problems faced by the Singapore public transport system in the mid-1970s included poor traffic management, serious congestion, inadequate and inefficient public transport services, and poor infrastructure. The bus sector was unregulated, with multiple operators competing on the streets. Buses were known as "mosquitoes," weaving in and out of traffic on haphazard routes and providing poor service. Yet, the cities discussed here boast of very high quality public transport systems today—among the best in the world. This demonstrates the ability of a good lead institution in transforming the ease with which people can move around in a city.

The financial strength of the lead institution, and its ability to allocate resources across multiple implementing and operating entities, is its greatest asset in securing compliance with its plans. Successful lead institutions, such as STIF, TransLink, and LAMATA, have a dedicated source of funding to finance management and administrative expenses. Similarly, TfL and LTA in Singapore receive substantial grants from the government. While a legal mandate to coordinate among different agencies is perhaps helpful, nothing is more effective than a lead agency's ability to allocate funds.

IX. **Key Success Factors** in the Sustainability of the Lead Institution

While it may not be too difficult to create a lead institution, as many cities have done, the challenge is to integrate it into the existing structure without creating conflicts and jealousies and to enable and empower it to carry out its responsibilities in an effective manner. The key elements essential for ensuring the sustainability and suitability of a lead institution are as follows:

- **Public value** — An ability to define policies that advance the societal good

- **Internal capacity** — Development of the organization in such a way that it has the technical and financial capacities to perform its tasks

- **External / Political support** — An ability to garner support at the highest political level(s) to ensure that resources are made available to build organizational capacity to carry out the public policy agenda

Figure 6 illustrates that the best arrangement for a metropolitan authority is where these three elements overlap, drawing on the best of public value, internal capacity (including technical and financial capacity), and external / political support.

Figure 6: Key Elements for Success of the Lead Institution
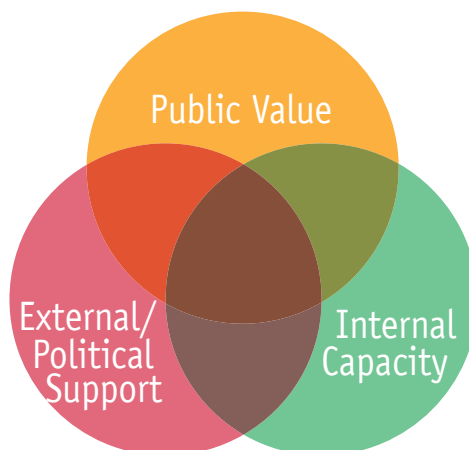
V.1   Public value

It is critical for the lead institution to create something that the public values (and knows about) to gain broad support. Congestion and other negative externalities associated with motorization adversely affect all residents, those who own and use vehicles as well as those who do not. Street space is a public good and is to be shared among all users, from pedestrians to bicycles, two-wheeler motorized vehicles, automobiles, private cars, taxis, and buses and other forms of transport.

In the absence of a planned approach to addressing mobility issues, street space (including sidewalks) tends to be monopolized by private vehicles, which only move some 20 percent to 30 percent of people in developing cities. This could be because adequate public transport is not available on certain routes or a street design does not cater to other users' safety. For example, the lack of sidewalks can be a safety risk for pedestrians. Sidewalks are often not provided, and where they do exist, the space is typically encroached upon by parked vehicles and abutting land uses. Each of the institutions in the case study cities was created to address the broader public good by improving the quality of life in them. The institutions received enormous support for their activities, directly affecting the extent to which they succeeded in addressing these issues.

In Singapore, LTA has been able to develop people-centered solutions by integrating planning, development, implementation, and management of all public and private transport in a holistic fashion to meet the rising expectations of Singaporeans. Singapore's success in this area is held up as an example for other cities in the world. Vancouver has brought significant innovation and expansion to service focused on improving public transit's market share, promoting transit-oriented development, and reducing greenhouse gas emissions. TransLink has succeeded in convincing the provincial government to allow it to use dedicated revenue sources—fuel tax, hydro levy, and a parking site tax (which started as a sales tax)—that were previously considered the sole domain of the province. This is a significant accomplishment and also an environmentally sound step. It is a major achievement in the global context.

In Lagos, LAMATA found success in reorganizing the bus industry along a pilot corridor by replacing minibuses with full-size, 13-meter-long buses that used street capacity more efficiently, changing operator incentives so that they drove safely, providing more reliable service, and coordinating routes and fare collection to facilitate transfers among buses and between buses and other forms of public transportation. Travel times were reduced by almost 30 percent, and more comfortable services were provided at an almost 40 percent lower fare rate compared to prevailing services. The quality of the road network was also improved, positively influencing bus speeds and vehicle maintenance costs.

In London, TfL significantly improved bus services and secured private sector efficiencies through competition. A measure of their effectiveness can be gauged by the successful introduction of a congestion-charging scheme that tends to meet with severe resistance in most cities. This led to a significant improvement in the share of public transport and reduction in traffic congestion in the city.

In Ahmedabad, AJL was established as a publicly owned entity to provide a new, high-quality bus transport system that would be reliable, addressed the needs of a diverse population, provided comfort, and remained within the means of the traveling public. Within a short period of time, it transformed the image of the public transport system from congested, unreliable, inefficient and a purveyor of poor service into an efficient system that became the pride of the city.

Thus, delivering on public expectations is an important success factor. Of course, this needs to be adequately supported by public communications programs and participation of civil society to ensure that people are aware of what the agency is doing and toward what end. This is particularly important in democratic societies where the elected leaders have to consider public sentiments.

As a case in point, in June of 2013 there were public protests in several Brazilian cities over the quality and cost of public services, including public transport. The Brazilian Federal government scrambled to organize a response including consolidating its urban transport investment programs and announcing national and local public transport councils with civil society participation to guide policy. The lesson here is that institutional change can be catalyzed by external "trigger events", such as an election, political movements, public protests, macroeconomic conditions that permit a new investment program, and existing institutions can be positively or negatively affected by them.

V.2   Internal capacity

There are two dimensions to internal capacity. One is the professional ability and competence of an institution's personnel. The other is financial authority. A lead institution must have professional staff capable of addressing the complexity of urban transport issues. The relative scarcity of qualified specialists with a comprehensive understanding of transport planning makes it difficult to build a core staff of professionals. Often, this constraint is overcome by hiring people from the national or international market at competitive salaries. This raises two issues: first, if staff members of a different nationality are hired as consultants for a fixed term to lead an organization, what guarantee is there that the long-term interests of the organization and the city will be adequately served? Second, to be able to hire staff at competitive salaries implies that an organization has the flexibility to offer a market rate to competent individuals and not be constrained by civil service salary levels.

In Lagos, LAMATA is not bound by civil service rules and has had flexibility to establish pay scales and service conditions as it sees fit. Appointments are made on merit rather than connections, including recruiting from the Nigerian diaspora for senior positions. As observed earlier, LAMATA got the governor and Ministry of Transport to agree to deposit 50 percent of motor vehicle registration and licensing fees into a transport fund managed by LAMATA and used for the authorities' administrative expenses. In Singapore, to attract and recruit talent, LTA ensures that entry-level salaries remain competitive. Its salary structure closely follows that of the civil service, which is already competitive with the private sector. It also benchmarks its salaries against the private sector to ensure competitive

compensation practices. In London, TfL staff members are paid competitive salaries.

In terms of the financial capacity of lead institutions in Lagos, London, Paris, Singapore, and Vancouver, they either receive significant grants from the government or have been assigned dedicated tax collection authority that gives them considerable financial strength both to support their own internal operations and to use for investment and operations projects. They are well positioned to channel the latter resources toward actually implementing plans and policies they develop and endorse. It is this capacity, perhaps more than any other, which is the key factor for success in the performance of these lead institutions.

V.3   External / Political support

Support from the highest political offices ensures that an agency will be able to carry out its mandated functions, obtain the financial resources it needs to support high-caliber staff, and manage internal opposition to reform programs. Urban transport infrastructure and service provision have the essential characteristics of a public good and provide considerable opportunities for private rent seeking, particularly in the form of providing rights to operate a service, thus offering protection to a particular group to the exclusion of others. In turn, politicians have a significant stake in maintaining the status quo because of opportunities for their personal financial gain: many informal sector vehicles are owned and operated privately by public officials. In this environment, a lead agency would require considerable political support to reform a bus-operating environment, introducing system reforms, integrating fare structures, improving management systems, etc.

The evidence shows that among the case study cities, consistently strong support from a politically astute champion was critical to success. These advocates were complemented by a solid transport organization with superior administrative and technical skills and transport experience. It is common for megacity political leaders to want to create a record of accomplishment as a legacy or as a base for running for national office. A competent executing agency is critical to delivering results.

The projects in Ahmedabad, Jakarta, and Lagos are closely associated with champions who engaged in focused campaigns to generate support among the general public and political leaders. These champions also helped the often-new organizations in implementing BRT projects despite opposition from vested interests, such as public officials in charge of competing agencies and private operators of shared-ride taxis and minibuses rightly concerned about their livelihoods. Their political leadership allowed the technical teams to do their jobs unhindered by challenges that the political leadership was best equipped to handle.

In London, strong leadership from the mayor proved instrumental in introducing the congestion-charging scheme, which effectively discouraged the use of private vehicles and simultaneously supported public transport.

Often one hears that there is no "political will" to pursue the right policies or support a particular project. Part of the reason for such a lack of political will could be an inadequate understanding of the issues and merits of the particular policy or project. As an example,

in the Philippines, the Cebu Bus Rapid Transit project is at an advanced stage of preparation and awaiting the approval of the president. The president, in turn, is not fully convinced of the project's merits and would like to see a demonstration or "proof of concept" to be convinced of its suitability for the city. This is where the leadership in Department of Transportation and Communications needs to come in and highlight the technical merits of the proposed project.

As noted above, a multi-dimensioned communications process is critical to building and sustaining political support.

VI. National Government as a Facilitator of Change and Capacity Building

The respective roles of national and subordinate levels of government in urban transport planning, management, and operations have been evolving since the 1960s and 1970s and are closely associated with changes in the political and socioeconomic contexts of countries. As countries undergo urbanization, an institutional shift appears to be emerging linking the planning and management of urban services within the framework of decentralization. What is the role of national government in promoting sustainable urban transport at the city level? Possible functions might include the following:

- Providing an overall planning and strategic policy framework

- Financing

- Building capacity

- Overseeing management and implementation

The evolving role of the national government in urban transport in Brazil since the 1970s is closely associated with the country's political and socioeconomic contexts. Beginning in the early 1970s, the federal government developed the first transportation master plans for metropolitan regions; initiated a nationwide program to train technical specialists; and established agreements for the transfer of technology, primarily from France and England. The metropolitan regions were

established as part of a national strategy in response to the need for an integrated planning of services and actions that extended beyond the geographical boundaries of large cities.

By the mid-1970s, federal assistance to mid-sized cities had been increased in an effort to implement corrective and preventive actions. In 1988, however, an amendment to the constitution introduced changes that raised the status of cities to a third independent level of government. Despite this, the federal government remains an important source of financing for investment in major transit projects through direct funding of infrastructure and by providing the go-ahead to borrow money from multilateral agencies. Since the "PAC" stimulus programs initiated in 2007, the federal government has become a major source of financing for new transit projects in large cities through agencies like the national development bank, "BNDES."   However, most public transport investment is still made by city and state governments as federal loans and grants typically require a large amount of counterpart or matching funds.

 In Colombia, the Ministry of Transport has no direct role in local passenger transport. It has, however, played a significant role in Pereira in enabling Megabus. The ministry provided the regulatory and policy framework, established the program under which Megabus was set up, and provided a significant part of the project investment using its own and development bank funds.

In Canada, the constitution does not give the federal government direct jurisdiction over urban affairs. Instead, the federal role has historically been through various ad-hoc spending programs, applicable across the country. Major infusions of federal capital into transit in Vancouver have sometimes been motivated by the city being host to major international events. For example, Expo 86 resulted in the Expo Line in 1986, and the 2010 Winter Olympics led to Canada Line SkyTrain services. From 2003 to 2009, the federal government supported the Urban Transport Showcase Program to support cities in several ways: improving transit services and establishing easy connections between modes; installing cycling facilities, footpaths, and next-bus transit information displays; promoting higher efficiency vehicles; producing community marketing and awareness campaigns; and redesigning older neighborhoods and transit corridors to provide improved transit service, wider sidewalks, better street furniture, more greenery, and new street art. TransLink received $ 7.7 million from the Urban Transport Showcase Program in 2005, and Main Street—one of the oldest and busiest transit corridors in Vancouver—was the beneficiary of this project.

In France, the central government passed a law in 1971 authorizing local governments to collect *versement transport*, a transport tax to cover operating and investment subsidies for public transport. In 1982, the central government passed another law requiring the establishment of an *Autorité Organisatrice des Transports Urbains* (AOTU) (Urban Transport Authority) in every metropolitan region along with the development of a master plan.

In South Africa, the national government has historically played a key role in planning and financing urban transport. The substantial bulk of spending on transport in South Africa originates in the national budget. Commuter rail is operated by the Passenger Rail Agency of South Africa, an agency within the Department of Transport. Urban commuter bus services

are provided by the provinces, using central government and their own funds. The "city," as the ultimate beneficiary of services, has had little control in adapting service requirements to its particular needs. Since 1994, there have been various policy and legislative initiatives to redefine the role of the national government. The 1996 White Paper on National Transport Policy clearly states, "In the past, Government's dominant role has been as a regulator of bureaucratic detail, a provider of infrastructure, and a transport operator, but it has been weak in policy formulation and in strategic planning. Government intends to reverse this legacy and focus on policy and strategy formulation with a reduced direct involvement in operations and in the provision of infrastructure and services, to allow for a more competitive environment." The National Land Transport Act of 2009 further shifted overall responsibility for planning and regulation to the cities (see Box 5).

Box 5: Emerging Role of the National Government in South Africa

A high degree of fragmentation in public transport investment and service planning currently characterize the situation in South Africa. The rail services are owned and operated by the Public Rail Authority for South Africa (PRASA). Regular bus services are partially run by the city, state agencies, and private operators. The taxi services are run by private operators organized as an association.

This arrangement is inefficient and suboptimal, as there is no modal integration and a high risk of wasteful capacity. In addition, cities are denied an integrated network. Focus also tends to remain on the supply side of interventions without demand side measures getting the attention they deserve.

In response to the deteriorating urban transport environment, government enacted the National Land Transport Act of 2009 (NLTA), a watershed in the history of urban transport evolution. The NLTA shifts overall planning and regulatory responsibility to the cities, offering in return the national government's financial support for them. It is based on bringing about a significant improvement in the quality of transport services by requiring an integrated mobility plan and an integrated transport network being developed by the cities.

Although the NLTA was a step in the right direction, it had major implications for city governments, charging them with responsibilities for which they neither had the capacity nor the financial resources. Cities are reluctant to take on additional duties because they lack the human capacity to carry them out, and the resources required to address the "needs" of the highly inefficient urban form—with the poor living far away from places of work and thus having to commute long distances—are substantial, going well beyond current fiscal transfers.

While the NLTA assigns specific responsibilities to each sphere, the national government must focus on building capacity in cities to carry out identified new functions and obtaining clarity on the financial implications of proposed changes.

In India, the Ministry of Urban Development has overall responsibility for urban transport policy and planning. In 2005, it introduced a large urban investment program channeling US$20 billion into sixty-three cities under the Jawaharlal Nehru National Urban Renewal Mission. The program marks a shift in the country's effort to link urban infrastructure funding to a commitment to implementing a menu of reforms at the city level. Financial resources are made available after cities prepare a comprehensive mobility plan consistent with a national urban transport policy focused on promoting public transport and non-motorized transport. A number of cities have focused on creating urban mass transport authorities and have implemented public transport and non-motorized transport improvement projects.

In addition to their financial support, national ministries and departments also often are in control of the main, national roads in a city (e.g., India, Indonesia, Nigeria, the Philippines) and own land around major infrastructure facilities (i.e., ports, railway stations, bus depots). In such cases, they have a major role to play in ensuring that their national agencies abide by the plans of a city.

Often there are significant needs in the areas of capacity building and contextual research. Multiple cities within the same country might have similar needs. There is also a need for a good urban transport database. Such requirements are best handled by the national government because there are economies of scale and common benefits in these being addressed in one place rather than in each city separately. The national government can also play a very useful role in facilitating knowledge exchange among cities. In India, the national government has taken the lead in putting together a large-capacity building program and a research program. It has also been organizing an annual conference on urban mobility to enable stakeholders to come together and share experience. A systematic process of rewarding good performance can be a powerful incentive for cities to learn from each other and engage in constructive competition.

VII. Conclusions

Institutional weaknesses are the source of many observed failures in urban transport. The ability of cities to undertake comprehensive planning and decision-making that is integrated functionally, spatially, sectorally, and hierarchically is too often constrained because of the highly fragmented governance structures of urban transport. Typically, several agencies, often at different levels of government, are involved in various aspects of urban transport. Concomitantly, comprehensive thinking is required across the multiple subsystems and disciplines, such as land use planning, environment, energy efficiency, services for the poor and physically disadvantaged, and so on. Therefore, the need for institutional coordination

across space and functions is increasingly being recognized as critical to developing an integrated and comprehensive approach to addressing mounting urban transport problems.

A number of cities have been successful in establishing effective lead institutions that encompass multiple jurisdictions, functions, and modes. These agencies have evolved over the years and are the source of a number of lessons for those contemplating similar institutions. What are now seen as successful institutional arrangements have actually evolved over decades, experiencing periods of significant change. Rather than focusing on current structures and their successful outcomes, "Institutional Labyrinth" draws attention to the challenges in developing such institutions and identifies key lessons.

The experiences of the spectrum of cities examined in this paper make clear the following:

- Lead institutions must encompass multiple functions, modes, and cover all jurisdictions in a metropolitan area.

- There is no single approach to establishing an effective lead agency. There will be differences based on existing political and administrative philosophies and legal framework. What is important is to maintain flexibility in approach and adaptability in design (to allow for adjustments) while avoiding compromising on long-term objectives.

- It takes time for lead institutions to become effective. Their performance and potential should be seen as evolutionary processes. Finding the right balance between expectations and possibilities evolves over time.

- Lead institutions must be empowered with the financial and technical resources to be able to perform effectively. To be effective, they need financial independence for their own operations as well as clear decision-making authority over *all* public sector funds being spent on transport in the respective metropolitan area.

Key lessons emerging from this study are as follows:

- *Need for a strong commitment* — Creation of a lead institution requires a commitment from the highest office(s) of government and a champion to further the cause of good management.

- *Long gestation period* — It takes time for expectations to match possibilities and a lead institution to fully realize its potential. It may not be possible to establish an ideal organization from the start, so it must be allowed time to evolve.

- *Human capacity* — Creating a lead institution is not by itself enough. It must be supported by good management. This requires attracting people with the best skills and experience, creating market-based incentive structures, and instating mechanisms for accountability.

- *Financial sustainability* — It is important to provide a financial structure through which a lead institution can carry its own weight vis-à-vis other ministries and agencies. It should be able to pay for what it needs, and it should be the only channel for funds needed for urban transport. Its sources of funding must be clearly identified and secured.

Lead institutions tend to succeed when they have strong external support, are provided the required manpower and internal financial capacity to live up to their mandated, and prove themselves able to deliver public value.

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More than half of the world today lives in cities, with the bulk of future urbanization happening in the developing world. Cities contribute a disproportionately higher share of a country's GDP compared to their share of the population. That is why they are often described as the "engines of economic growth". However, if they are the engines of economic growth, the transport systems are the "wheels" of this engine. The transport system connects people to jobs. It connects city residents to education, health care, recreation and to other city residents. Unfortunately, meeting transport demand of a growing population has led to several negative consequences, the most visible of which are congestion, air pollution, and road accidents.

Dealing with these problems is very complex. There are issues relating to affordability, disability, gender, livelihoods, political economy, human psychology, local culture, energy security, air quality and so many others that need to be taken into account. All of them need to come together. There is a need for comprehensive, multi-disciplinary planning and decision making. Unfortunately management of the multiple functions is fragmented and the norm is for multiple government agencies, at different levels of government involved with providing infrastructure and services.

If urban mobility challenges are to be overcome, lead institutions that take comprehensive responsibility for urban transport are critical. Several cities have been attempting to set up such institutions, but only a few have succeeded.

Institutional Labyrinth: Designing a way for improving urban transport services highlights the experience of some of these cities. The paper draws from the experience of cities that have succeeded and serves as an important resource for those working towards setting up lead transport institutions.

INSTITUTIONAL LABYRINTH

DESIGNING A WAY OUT FOR IMPROVING
URBAN TRANSPORT SERVICES
LESSONS FROM CURRENT PRACTICE

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