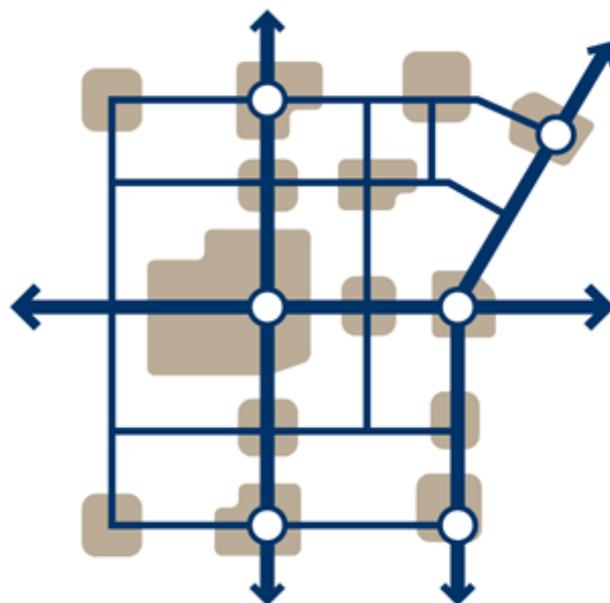


# Toolbox for the Establishment of Metropolitan Transport Executives (MTE) in ASEAN Metropolitan Regions



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one community





# **Toolbox for the Establishment of Metropolitan Transport Executives (MTE) in ASEAN Metropolitan Regions**

The ASEAN Secretariat  
Jakarta

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# Preface

In regard to Sustainable Transport, the Kuala Lumpur Transport Strategic Plan (ASEAN, 2015) features, as first and generic task: “ST-1.1.1 Develop “Avoid”, “Shift” and “Improve” (ASI) strategies at the regional and Member States levels.”

Today, in ASEAN metropolitan regions, implementation of these strategies is lagging behind the increasing challenges arising from rapid urbanisation and economic growth. This is despite the availability of proven and effective tools and technologies for each strategy, and of financial instruments and capacities. ASI plans and projects do not materialise at the pace, at the scale and with the impact they would need to begin tackling the challenge.

A root cause for this situation may lie in a lack of consideration for economic, social and environmental values and assets at stake and an irrational attachment to obsolete visions of automobile dependent development on behalf of many policy makers. The likely practical cause for this situation is institutional. Existing urban transport governance structures are not designed for the successful implementation of ambitious sustainable transport policies. Too many ASI plans and projects are delayed and compromised on a long way through an Institutional Labyrinth (Kumar & Agarwal, 2013) made of a multitude of authorities responsible for different element of integrated, transformative urban mobility projects, but lacking the capacities and incentives to work together toward a common vision for Sustainable Transport.

The ASEAN Regional Strategy for Sustainable Land Transport (ASEAN, 2019) has identified outright barriers to the implementation of Sustainable Land Transport, as institutional barrier, in turn, entail financial barriers, limited human resources and technical capacity, and lack of understanding of sustainable transport and its policy solutions. To make faster progress and cease losing time, opportunities and resources due to the absence of effective sustainable transport policies, ASEAN Member States need to Enable themselves to develop and implement overdue ASI plans and project, as explained in a seminal World Bank publication (Stucki, 2015): “Enable: To establish an efficient and responsible governance system, capable of anticipating needs, guiding action, and ensuring integrated management and development of urban transport systems.”

The purpose of this document is to provide responsible authorities with tools to find their way out of the institutional labyrinth and, overcome barriers, and finally enable themselves to design and implement adequate sustainable transport policies following ASI strategies. For this purpose, the role of Leading Transport Agencies (Changhwan MO, 2014) is pivotal. Metropolitan Transport Executives (MTE) is a generic term to designate such leading agencies that have in common to effectively coordinate and execute on a tactical level the sustainable transport strategies decided and supported by all the responsible political authorities. This toolbox draws on the experience of the public transport industry, urban planners, and policy makers around the world. It focuses on the structure and governance of mobility services and transport systems. It is complementary with the guidelines for the elaboration of Sustainable Urban Mobility Plans (SUMP), which develop the concept and practice of integrated and inclusive planning processes in greater detail.



# Executive summary

Governance of transport in metropolitan regions is not an ASEAN-specific issue, but it is a very timely one in ASEAN. Tremendous economic growth over last few decades has led to a rapid urban growth in ASEAN Member States, transforming towns into cities that, gradually, form vast and complex urban and regional systems. This trend is expected to continue together with an exponential growth of mobility and transport service requirements.

Local governments are often overwhelmed by the scale of the growing transport issues, which may extend far beyond their jurisdiction or geographic borders and require capacities beyond their own prerogatives, budgets, and skills. A new form of governance is required to address this challenge of a new scale and promote sustainable mobility and management of transport systems. **The generic concept for this new governance of transport is the Metropolitan Transport Executive (MTE).**

The MTE concept originates in the public transport sector, but it has the vocation to encompass all aspects and actors in the transport sector – policy makers, public administrators, private investors, service operators – of transport services for people and goods that use multipurpose streets, roads and rail infrastructure that needs to be planned, implemented, and managed, where competition among transport operators for public resources and market shares needs to be arbitrated, and where transport system performance needs to be improved through greater competencies, synergies, and resilience.

Transport authorities across ASEAN face similar challenges and may elaborate similar, and even common solutions. To compare and conceive existing and future governance structures, it is necessary to use a set of common analytical concepts that allow to examine existing and design new governance structures, distinguishing strategic level, tactical level and operational level tasks. Using these concepts, this document recalls the most generic and traditional models observed around the world:

- The **market-oriented Regulator Model**: Government's strategy is to let the operators of transport services develop their business in a play of supply and demand, limiting its intervention to the regulation of these market forces ensuring safety and fair play;
- The state-directed, **vertically integrated Agency Model**: Government's strategic choice is to fund, define and operate the transport services as a service delivered according to public policy plans and criteria, such coverage of the entire territory or low-cost services for certain groups or purposes;

and proposes a Toolbox for the creation and the development of the synthetic Metropolitan Transport Executive Model that combines their respective advantages.

Indeed, both traditional models offer effective governance for different sectors of the transport system in different circumstances. But neither delivers the tactical-level tasks in a satisfactory manner. Yet, the tactical-level tasks of integrated planning, provision of infrastructure, common services and support systems are of central and critical importance in a large, complex metropolitan transport systems that are governed by several responsible authorities and comprise

a variety of transport modes and their operators. Therefore, around the world, strategic-level authorities responsible for metropolitan transport have developed an intermediary MTE model that is designed to address the specific challenges of large cities and metropolitan regions.

Depending on the stakeholder landscape, the geographic configuration of the transport system and the transport modes deployed, each level – strategic, tactical, operational – can be organised in different configurations with some degree of overlaps. In real life, the three governance models – regulator, agency, executive – often co-exist, with an MTE in the centre of the metropolitan set-up. MTE act as value-added **vertical link** between stakeholders on the strategic and on the operational levels of the transport system. MTEs also must maintain effective **horizontal relationships** with other tactical level actors within the passenger transport sector:

- **Strategic level actors:** authorities responsible for metropolitan transport and related matters, typically national ministries, provincial and municipal governments in charge of transport and road infrastructure
- **Tactical level actors:** MTE – an agency owned and controlled by the authorities responsible for metropolitan transport. Other tactical level actors in the transport sector: for instance, the national railways for commuter rail, municipalities for parking management, spatial planning agencies.
- **Operational level actors:** small, medium or large, public or private, domestic or international enterprises.

Furthermore, strong MTE can effectively deal and cooperate with their tactical level counterparts in related sectors that critically contribute to the development of an effective metropolitan transport system, such as: telecommunications, banking, energy, and education.

The recurrent task of any MTE is the pro-active organisation and development of the transport services that are delivered by transport operators. This work of contracting these services – tendering, negotiating, controlling, evaluating, compensating – is a demanding task that is increasingly codified in international business practices and a key competency of MTE.

LTA Singapore is a world-renowned example for a mature, integrated MTE, on par with institutions like Transport for London (TfL) and the Dubai Road & Transport Authority (RTA). Jabodetabek Transport Management Agency (BPTJ) is the MTE created in 2015 for the execution of the Greater Jakarta Transport Master Plan approved in 2018. Other tactical level agencies have much narrower scope and lack the integrative role that is typical for MTE. For strategic-level authorities there are many pathways to setting-up a well-functioning MTE, but the following stepping-stones are fundamental paving blocks:

- A. Awareness of international good practice, and of local circumstances
- B. Extensive stakeholder dialogue, and clear common goals and commitments
- C. Long-term vision for the regional transport system
- D. Legal basis defining the scope, role, organisation, and governance of the MTE
- E. Metropolitan transport masterplan that sets the goal of the transport system, and provides each actor with a defined role, and corresponding opportunities and challenges
- F. Method for monitoring and continuous improvement of the MTE

# 1) Introduction

## 1.1. Implementation of ASEAN Transport Strategic Plans

The Kuala Lumpur Transport Strategic Plan 2016-2025 – KLTSP (ASEAN, 2015) articulates a **need for the ASEAN Member States to adopt sustainable transport policies**. Specific excerpts from this plan that guide and inspire the sustainable design of urban mobility in metropolitan regions in ASEAN, are:

Institute coordinated approach to further promote non-motorised and public transport in ASEAN cities  
(ST-1.1)

Develop Avoid – Shift – Improve (A-S-I) strategies at the regional and Member States level  
(ST-1.1.1)

Improve road infrastructure in all ASEAN Member States that accommodate non-motorized transport modes  
(ST-1.1.2)

Ensure government support and commitment for the implementation of sustainable transport  
(ST-2.1)

Develop and adopt policies related to the identified measures for the implementation of sustainable transport  
(ST-2.1.1)

Review the implementation of the policies and, where necessary, adopt new policies  
(ST-2.1.2)

Promote the integration of transport and land-use planning  
(ST-2.5)

*Source: Kuala Lumpur Transport Strategic Plan (ASEAN, 2015, pp. 32-34)*

The ASEAN Regional Strategy on Sustainable Land Transport – ARSSLT (ASEAN, 2019) delves deeper into issues of mobility and the policies that national and local government can consider approaching the complex issue of urban transport:

“ASEAN’s urban population is growing rapidly, and urban centres are important hubs for freight and logistics. Approximately 50% of transport emissions are attributed to urban transport. Local impacts of transport are often most severe in an urban context. Key avoid-shift-improve measures for promoting sustainable urban transport include transport demand management, transit-oriented development, parking management, appropriate pricing, provision of high-quality public transport (road or rail-based), public transport reform, non-motorised transport (walking and cycling), logistics optimisation, hybrid/electric vehicles, clean fleets, etc. All such measures have high social and economic benefits and have been implemented at scale.

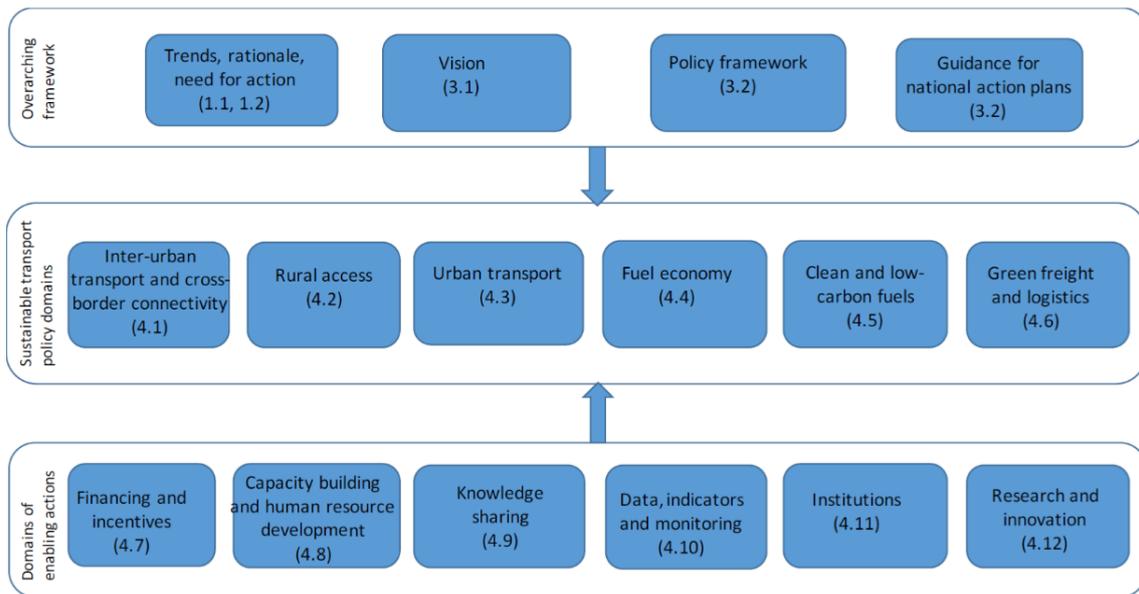
These are enabled by sustainable urban mobility plans and can be further supported by national urban transport programmes. Other elements are institutional arrangements for urban transport planning (including urban transport authorities for metropolitan regions), data and monitoring systems, and decision-making processes on policy, planning and budget allocation.”

*Source: ASEAN Regional Strategy for Sustainable Land Transport (ASEAN, 2019, p. 32) ; Kuala Lumpur Transport Strategic Plan (ASEAN, 2015, pp. 32-34)*

The ARSSLT provides an overview of the bigger picture of policies acting on sustainable transport policy domains:

- The overarching **framework determined by the strategic-level authorities** responsible for transport policy, including the national policy framework (3.2), Visions (3.1), Action Plans (3.2), based on the deep knowledge of trends and needs for action (1.1, 1.2)
- The **enabling measures and actions, conceived and managed on the tactical level**, in particular the institution (4.11) of the MTE who manages transport policy implementation through finance and incentives (4.7) using data, indicators, and monitoring (4.10) and building capacities for the entire sector (4.8 to 4.12)

**Figure 1: Sustainable Transport Policy Domains in ARSSLT**



*The numbering in the brackets refers to the section numbers of the ARSSLT*

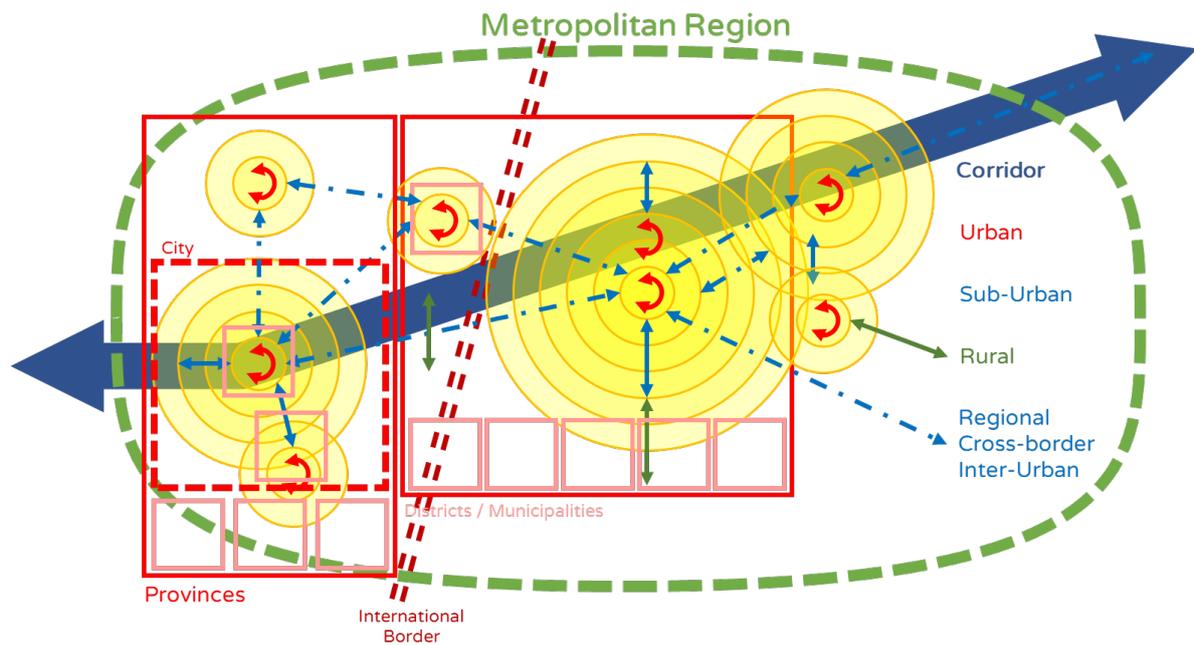
*Source: ARSSLT (ASEAN, 2019, p. 6)*

Among the policy domains, the ARSSLT defines three geographic scales that together define the **scope of metropolitan regional transport policy**:

- **Interurban transport and cross-border connectivity**
- **Rural access**
- **Urban mobility**

With urban growth, the trend is toward more inter-action and inter-connection between urban, sub-urban, rural, inter-urban and even cross-border mobility. This is the reality of metropolitan regions as they are expanding at a fast pace in all ASEAN Member States. Urban growth entails new mobility patterns and transport solutions at a larger scale than hitherto, which requires new governance structures at the appropriate levels.

Figure 2: Urban, Rural, Inter-urban and Cross-border Components of Regional Mobility



Source: SMMR project

Transport challenges in large metropolitan regions are of particular concern because they affect large numbers of people and businesses. Transport also contributes significantly to the national accounts of greenhouse gas emissions. On the one hand, projects on the improvement of national and trans-national transport corridors get the necessary attention in national policy making. On the other hand, local and regional transport challenges often escape attention until they reach a severe stage of inefficiency. The MTE toolbox contains solutions for such regional configurations that require to address transport issues at a new scale, including regions that evolve along newly upgraded economic corridors, including cross-border regions.

## 1.2. Urban Growth in ASEAN

The economic development of ASEAN Member States in the past few decades has led to their rapid urbanization. Not only has there been a high degree of migration to established capital cities like Bangkok, Jakarta, Manila, Kuala Lumpur, or Hanoi, but many smaller cities such as Da Nang (Vietnam) and Davao City (Philippines) have become centres of industry and trade and developed into high level urban nodes. In this process, increasing land prices in the central city areas are pushing the working population outward, leading to urban sprawl, and inclusion of nearby towns in the growing urban system, and to the formation of new metropolitan regions (Sheng, 2017).

A snapshot of urbanization levels in the ASEAN Member States is shown below. The data reveal a clear trend, where the lower the current level of urbanization, the higher the projected annual rate of change in urbanization. In many countries, the administrative and/or political division into urban and rural areas has already lost its relevance due to advances in transport and communication technology. Metropolitan areas are becoming the new urban reality and the framework for providing basic services and employment.

**Figure 3: Urbanisation of ASEAN Member States**

Country	Level of Urbanisation (2018)	Average Annual Rate of Change (2015-2020)	Country	Level of Urbanisation (2018)	Average Annual Rate of Change (2015-2020)
Brunei Darussalam	78	1.7	Myanmar	31	1.7
Cambodia	23	3.2	Philippines	47	2.0
Indonesia	55	2.3	Singapore	100	1.4
Lao PDR	35	3.3	Thailand	50	1.7
Malaysia	76	2.1	Viet Nam	36	3.0
			ASEAN	49	2.2

*All figures are in percentages (%)*

*Source: Adapted from (United\_Nations, 2018)*

The size of the urban settlements in ASEAN is also a specific feature that dictates the unique evolution of urban centres. There are only a few megacities. More than half the urban population is situated in urban centres with a settlement size of less than 0.3 million population (refer to the table below). While many larger ASEAN cities have adopted mass rapid transport systems for the movement of their people, many smaller urban centres rely primarily on informal transport or public buses. The quality of these buses often does not meet the expectation of its users and is perceived as a “poor man’s transport”.

**Figure 4: Urban Population by Size of Urban Settlement in the ASEAN Region (2020)**

Urban settlement size	No. of urban settlements (2020)	2020 Population ('000)	Share of urban population (%)	Share of total population (%)
>10 million	3	35,233	10.5	5.3
1-10 million	31	76,443	22.8	11.4
0.3-1.0 million	93	47,380	14.2	7.1
<0.3 million	-	175,463	52.5	26.2
Total Urban	-	334,519	100.0	50.0

Source: Adapted from (United Nations, 2018)

With rising incomes and GDP growth rates above global average, a vast number of the population in the ASEAN Member States is rising out of poverty (see table below). The rise of the middle class is leading to higher available income increasing the demand for more and better housing, and mobility.

**Figure 5: Economic Class in Southeast Asia and the Pacific (1991-2015)**

Economic class	1991 (%)	2000 (%)	2010 (%)	2015 (%)
Extreme working poverty	47.0	33.7	13.5	8.6
Moderate working poverty	24.1	27.5	22.2	18.0
Near poor	16.6	22.9	34.3	33.9
Middle class	12.4	15.9	29.9	39.4

Note: Southeast Asia and the Pacific include ten ASEAN Member States, Timor Leste, and the developing Pacific Island States; income/consumption at 2005 PPP.

Source: (Huynh, 2013)

### 1.3. Stakes of Organising Urban Transport

The challenge is to manage and meet metropolitan mobility requirements in a balanced and sustainable manner. Broadly speaking, the mobility aspirations of various stakeholders in ASEAN metropolitan regions can be summarised as in (Sheng, 2017):

- The business community demands physical and institutional conditions that attract and support investment for an entrepreneurial globalizing city.
- Expanding middle-class demands a comfortable life and a safe environment in a liveable consumer-oriented city.
- Urban poor need access to affordable housing, services, and economic opportunities in an open inclusive city.
- Future generations will face the consequences of today's decisions. They need an environmentally responsible city and expect decision-makers to create a sustainable transport system.

In the absence of good quality public transport, mobility needs are fulfilled by private means of transport, whether by walking, cycling, motorcycles and, increasingly private cars. The automobile industry has targeted the aspiration of the middle-class with bargain loans to finance private vehicle ownership and high-intensity advertising. This has led to high levels of congestion in urban centres, which, in turn, leads to a vicious circle against public transport usage.

Organised, regulated, efficient, and sustainable mobility systems play a key role in the social and economic development of cities and metropolitan areas by enabling people to access and participate in activities for different purposes in different locations. As stimulators of economic and social dynamics, urban mobility systems are also key factors of quality of life and international competitiveness. A well-planned and developed transport system and mobility management are fundamental to a successful development of any metropolitan region.

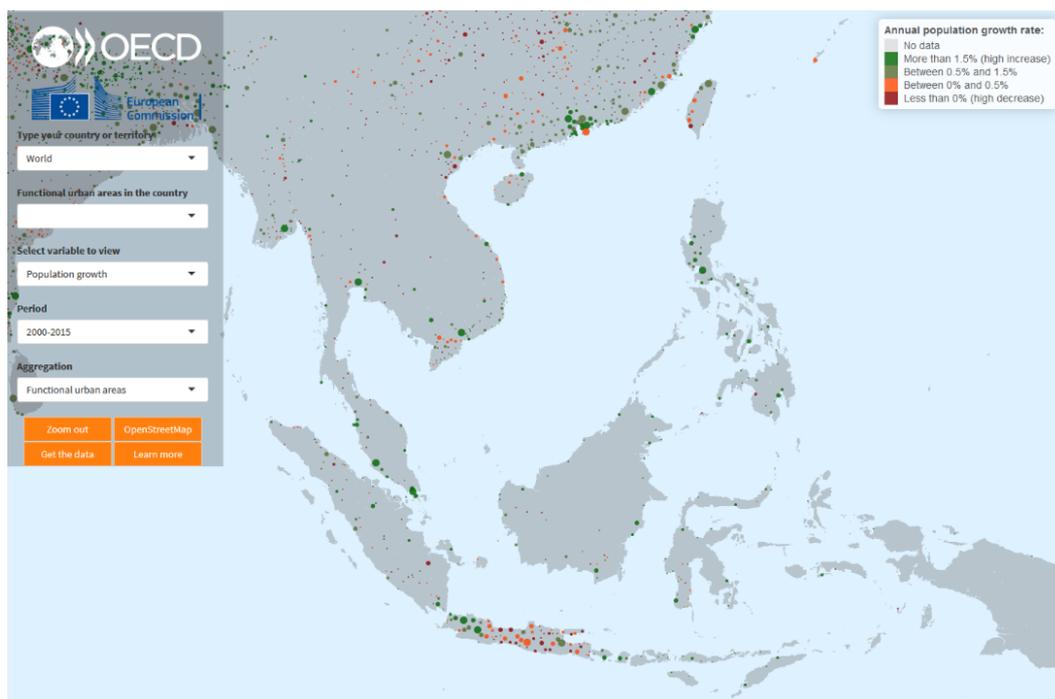
In the early stages of development of a metropolitan region, the financial resources are often limited, and governance of the transport system is not considered a priority. Loose regulation of urban mobility services may be the most straightforward solution to provide transport services. In small to medium sized metropolitan regions, where travel patterns are simple and traffic issues limited, this system works well as market demand and supply effectively balance as a self-regulatory mechanism. But this is insufficient in the context of a large metropolitan region with complex travel patterns and abundant volumes of traffic.

From an institutional point of view, many of the current urban mobility problems in ASEAN arise from the fact that multiple authorities are responsible at national, provincial and city levels of government with overlaps and gaps between their respective functions. In addition, outdated or otherwise awkward regulations as well as insufficient monitoring and oversight mechanisms, at the national, provincial or local levels may affect efficiency or transport service organisation and delivery.

## 1.4. Metropolitan Regions: Definition and Their Specific Issues

In ASEAN, urban geographies are very contrasted. West Java is highly urbanised and features many interrelated metropolitan regions (Jakarta – Bandung – Sukabumi – Cirebon – Cilegon) which is best described as megalopolis (Priatmodjo, 2011), and could eventually encompass the entirety of Java Island. Manila, Bangkok, Kuala Lumpur, Hanoi and Ho Chi Minh City, are on a similar path to linking up with neighbouring metropolitan regions.

Figure 6: Metropolitan Regions in ASEAN according to OECD definition



Source: <http://www.worldciestool.org/>

The Organisation for Economic Co-operation and Development (OECD) offers the following geo-statistical definition of metropolitan regions referring to daily patterns of “commuting” extending beyond the contiguously built-up cities.

Metropolitan areas [regions] are defined relying on the concept of Functional Urban Area (FUAs), which are composed of a city plus its surrounding areas approximating the extent of the city’s labour market (‘commuting zone’)

Source: (OECD, 2020)

The physical geography of today's fast-growing metropolitan regions rarely coincides with the administrative boundaries that were established decades ago, when urban and transport patterns had much smaller dimensions. Within a metropolitan region a large proportion of residents lives within the jurisdiction of one authority responsible for urban transport services but work in an area under the jurisdiction of another. As a result, several local, intermediate, and national authorities hold different responsibilities for the transport system for different territories within any given metropolitan region, making the coordination between these responsible authorities one fundamental task of MTE.

Transport systems and mobility patterns evolve with the underlying objective of making travel faster and bringing far-away places closer, thus constantly pushing the limits of metropolitan regions. This growth may be influenced and directed by, for instance, economic corridors or newly created cross-border or cross-water links. It is desirable that sustainable transport governance is established at scale of the full metropolitan region, including its peripheral areas to address the management of the metropolitan transport system in its entirety and before the typical issues of un-managed growth grow out of control.

Complex mobility patterns are a defining element of metropolitan regional transport. Residents of metropolitan regions move for many different purposes at various scales from short neighbourhood distances through medium urban distances to regional and inter-urban distances. Their daily routines can be improved applying the Avoid – Shift – Improve (A-S-I) strategy:

- Avoid the necessity to make long trips for high frequency occupations such as education, groceries, leisure activities, and work
- Shift to the most efficient mode, for each trip, in a multimodal transport system
- Improve the technology of each mode of transport

In metropolitan regions, all trips for all purposes tend to be longer than in smaller urban areas. Metropolitan transport systems also tend to be inefficient, if travellers do not have the opportunity to choose the most appropriate mode of transport for each trip they undertake. Singapore's Land Transport Master Plan 2040 shows how the A-S-I strategy can be implemented in an ASEAN metropolitan region with a pro-active multi-modal, horizontally integrated MTE, as represented by the Land Transport Authority (LTA).



## 2) Strategic, Tactical, and Operational Levels

Generally, the design and implementation of public policies can be described as a three-level process:

- Strategic level tasks: set the rules, define the objectives, and allocate the resources,
- Tactical level tasks: elaborate and execute the plan to meet the objective within the given rules and with the available resources,
- Operational level tasks: provide the customer service, according to the plan, or in a market where supply meets demand.

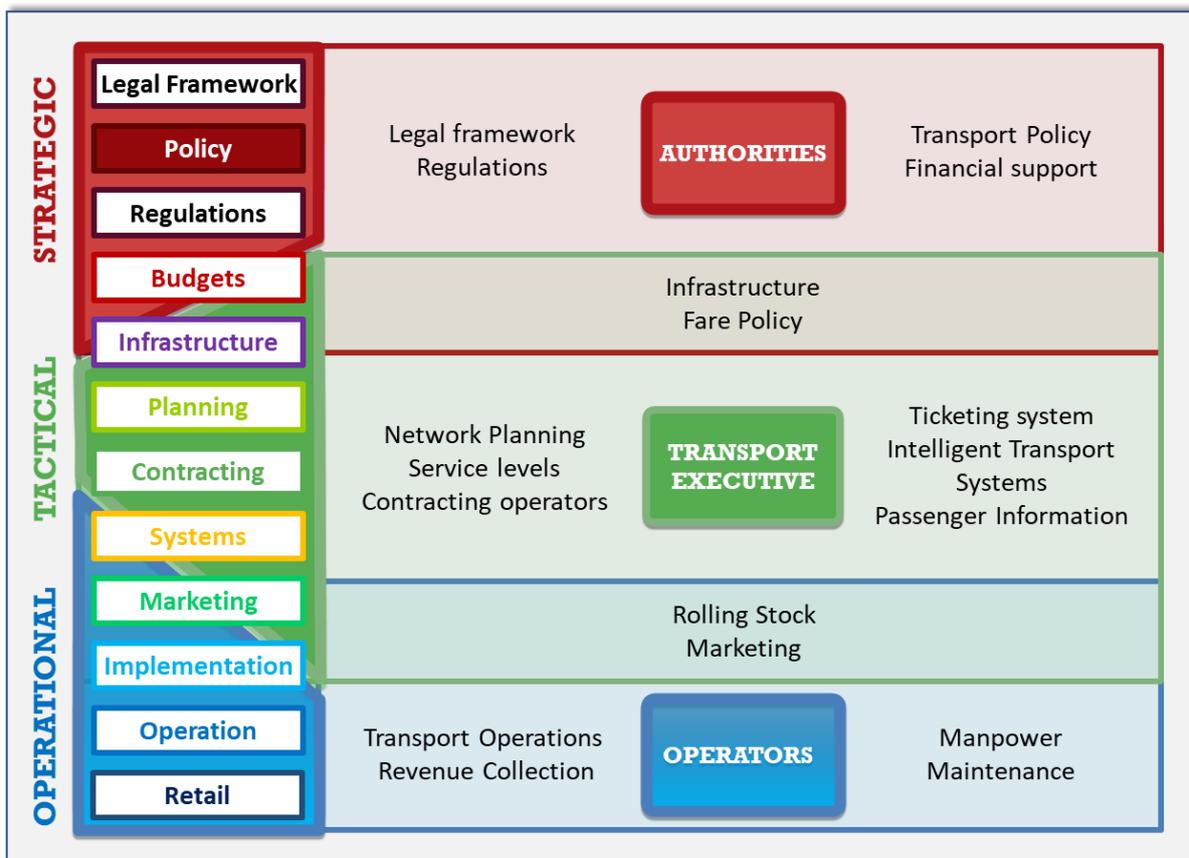
The typical food market is an illustration of these three levels. The strategic level task is to establish the rules of the trade and to guarantee the existence of the market, including the availability of certain products and supply chains. The tactical level task is to design, set-up and run the market, providing the roof, water, electricity, cleaning, security, logistics and other services to the traders in the market. Supplying the clients with the products and services they expect to obtain in the market is the operational level task.

All tasks in the transport policy process can be attributed to one of these three levels. For instance, setting the legal framework, defining the transport policy and the financial support made available by the government is clearly a strategic level task, while maintenance of rolling stock, management of manpower and sale of tickets (retail, revenue collection) are operational tasks. **The quintessentially tactical tasks are network planning and the provision of infrastructures and systems that enable operators to produce and provide their services to the customers.**

The three levels of the public policy process are filled and supported by many specialised actors. Hence, in the regional transport sector, the three levels of the public policy process also yield a useful grid for the analysis of the institutional governance structure:

- **Strategic level actors:** authorities responsible by law for the regulation and provision of urban mobility, e.g. municipalities or provinces for urban transport; provinces or national governments for interurban transport,
- **Tactical level actors:** a variety of actors who plan the transport system and provide system wide services, e.g. MTE are tactical level actors by design
- **Operational level actors:** transport operators of all modes, sizes, and corporate statuses

Figure 7: Strategic, Tactical and Organisational Level Tasks and Actors



Source: [SMMR project](#)

In all circumstances, the typical strategic level and operational level tasks and actors are clearly defined. This is not the case for the tactical level. In simple transport systems, some tactical level tasks are executed by strategic level actors, others by the transport operators, and many remain unattended. As transport systems become more complex, the scope and importance of tactical level tasks increase, and their organisation becomes the stake of many actors' influence. The national legal and policy framework must ensure that these influences are orchestrated for the common good and efficient transport systems.

## 2.1. Strategic Level

**The strategic level is headed by the national legislator, government and ministries who determine the overall goals of transport policy.** This highest level establishes the legal framework, which defines the institutional set-up of the sector and determines which authorities are responsible for which specific tasks and the resources and prerogatives they can use to accomplish these tasks. The legal framework also introduces the rules applying to the private and public transport operators and establishes a Regulator that determines and enforces more detailed regulations (see next chapter on Governance Models).

Responsible authorities are in charge of specific portions of the transport system that are often subdivided based on transport mode and geographic characteristics: rail vs road vs waterways; national vs provincial vs municipal. Other authorities are in charge of related matters, such as spatial planning, labour, customs, energy and environment, which may have a considerable impact on the transport sector on the strategic and on the tactical levels.

## 2.2. Tactical Level

**On the tactical level, plans are elaborated regarding the best possible way to employ available resources to achieve the objectives set by the strategic level.** This includes the coordination among the various responsible authorities and detailed allocation of the budgetary provisions.

By default, each responsible authority tasks its in-house administration with tactical level duties, which may result in different tactical actions pursued by each responsible authority. Coordination between the local responsible authorities may be orchestrated by the national level transport ministry. However, few national level ministries are prepared to coordinate and pro-actively conduct regional transport policies in all metropolitan regions in the country. Therefore, national legal frameworks may provide for Metropolitan Transport Executives (MTE), whose role is:

- **to organise the horizontal coordination among regional and local level responsible authorities** and combine their capacities in a single, professionally managed, technocratic organisation that helps these authorities to use their resources effectively and to defend their common interests in front of the national level authorities, and in the face of operating companies.
- **to facilitate vertical coordination** with national authorities on the one hand, and/or operating companies on the other, by including these actors in the set-up of the MTE.
- In other cases, the legislator and national government does not encourage such complex set-ups and encourages “integration” instead of “coordination”. In this case, horizontal coordination is achieved by handing responsibility for metropolitan transport to a metropolitan government. And vertical coordination is achieved by placing all tactical and operational tasks under a single authority, as, for instance, national railway companies, metropolitan railway projects and some City Bus operations (see Chapter 3.2. for more details regarding horizontal and vertical integration).

**There is an increasing number of private sector actors on the tactical level**, such as the internet-based ride-hailing and delivery dispatch services (e.g. Grab) that fulfil coordination and planning tasks for their own purposes. With their share in urban mobility increasing significantly, their tactical level decisions influence the regional transport system. Data is a fundamental resource for tactical level activities. Dispatch services accumulate large quantities of data, which strengthens their position on the tactical level. Other actors, such as mobile phone operators, operating systems providers and digital map services accumulate even larger amounts of big data, which provides them the most detailed and comprehensive knowledge of mobility patterns and transport choices of entire populations.

Similarly, managers of information systems and of payment systems make their own strategic and tactical level decisions that may have a considerable impact on the transport service market. The legislator and responsible authorities must acknowledge the increasing share and power of the information-age private actors and should use their power to effectively integrate these actors in the overall transport governance, on a basis of mutual respect and cooperation between public and private actors.

**Figure 8: www Based Dispatching Services - a New Form of Tactical Level Actor**



The ASEAN based company GRAB fulfils tactical level metropolitan transport tasks for individual and shared transport services in many innovative ways:

- Analyse and meet mobility demands in their entirety, from “door-to-door”, using any mode of transport available, including the delivery of food items from the restaurant to the consumers’ door (horizontal modal integration),
- Provide easy-to-use communications and payment tools,
- Plan and dispatch transport vehicles in the optimal way, using big data and other modern management tools available,
- Supervise and quality control operations (often so tightly, that they could also be qualified as operators).

The model was deemed so successful that responsible authorities chose to transfer part or all of a city’s bus operations under the umbrella of similar “demand responsive” systems. This, however, has not yielded the expected results, because even the best-optimised individual or shared modes of transport cannot compete with scheduled mass transit as the backbone of any larger city’s or region’s transport system.

### **Cities Struggle to Boost Ridership With ‘Uber for Transit’ Schemes**

Helsinki, Los Angeles, Shanghai, Singapore, and other metros have been experimenting with on-demand buses—and not seeing a lot of success.

Public sector MTE and new tactical level private actors have different roles and approaches. These should not compete but combine and cooperate as to form effective and efficient metropolitan transport systems.

Source: <https://www.grab.com> ; <https://www.wired.com/story/cities-on-demand-transit-buses/>

## 2.3. Operational Level

**The operational level of the governance structure focuses on the actual delivery of transport services.** Transport operators manage vehicles, drivers and deliver customer service. Private sector micro, small and medium sized companies are very quick and effective in creating new services without the intervention of any tactical level or strategic level institution wherever there is a market-demand for such services.

But as the industry grows, many market factors push toward larger operating companies. Larger companies can achieve economies of scale in the execution of typical operational tasks, such as vehicle maintenance and staff management. Larger operating companies or associations of operating companies also have the experience and skills to effectively tackle critical tactical level tasks, such as setting routes, timetables, and passenger fares.

Associations or syndicates of small and medium sized operating companies manage diverging interests among member companies and represent their corporation in dealings directly with the strategic level authorities. Associations are largely “self-regulated” and often suspicious of responsible authorities or MTE attempting to interfere with their business on the tactical level.

In more formally organised systems, operators can be public or private organizations bound by some form of licenses (issued by the regulator) and contracts (with the transport executive) that determine the level of service to be provided. The responsible authority – indirectly, through the regulator or the transport executive – determines the fares, routes, facilities, services, and multi-modal integration to be provided by the operators. These interventions should improve the operators’ business and revenue. If they do not, the responsible authority can be expected to provide the operators with adequate compensation for public services delivered. In this case:

- If compensation is insufficient, operators will seek to make ends meet and earn a profit by reducing production costs and customer service or, when this is not possible, cease operations.
- If compensation is abundant, operators will consider these compensations as their primary source of revenue, and neglect customer revenue and efficient production.



# 3) Governance Models

## 3.1. Regulator, Agency and Transport Executive Models

Transport systems cannot function without a minimal set of tactical level tasks being accomplished: determine stops, routes, fares. In the Regulator Governance Model, strategic level state actors may accomplish these tasks as part and extension of their own regulatory prerogatives, while private operators accomplish other tactical level tasks, individually, or in coordination with each other. In the public Agency Model, so-called vertically integrated public transport agencies encompass all three levels of the process, including the tactical level.

**As transport systems grow larger, multi-modal and more complex, the tactical level tasks also become larger and more complex and tend to be accomplished by specialised organisations.** These organisations may evolve from government administration departments or from operator associations. The evolutive approach of filling the tactical level gap by extending the scope of strategic level or of operational level actors, however, has many limitations. Responsible authorities can only act within the narrow limits of their prerogatives and their administrative management often lacks agility. Operators will be agile, but only in the pursuit of their narrow commercial and corporatist advantage.

The solution to this dilemma is the creation of a different type of organisation that is specifically designed for tactical level functions. When this organisation is clearly identified as being separate from responsible authorities and from transport operators, a third model is created, the Metropolitan Transport Executive Model. Transport Executive is the generic term that designates this new class of tactical level organisation. In practice, transport executives often carry names including “commission”, “authority” or “association”, which indicate a particular history and pitch given to its role and way of working.

Figure 9: Definitions of the Regulator, Agency and MTE Governance Models

**Regulator Model:** the strategic level authorities set the rules and lets the operators do the rest. In this model, the tactical level tasks are not taken care of by any particular organisation, like in many other service sectors, such as, for instance, the hotel and catering industry.

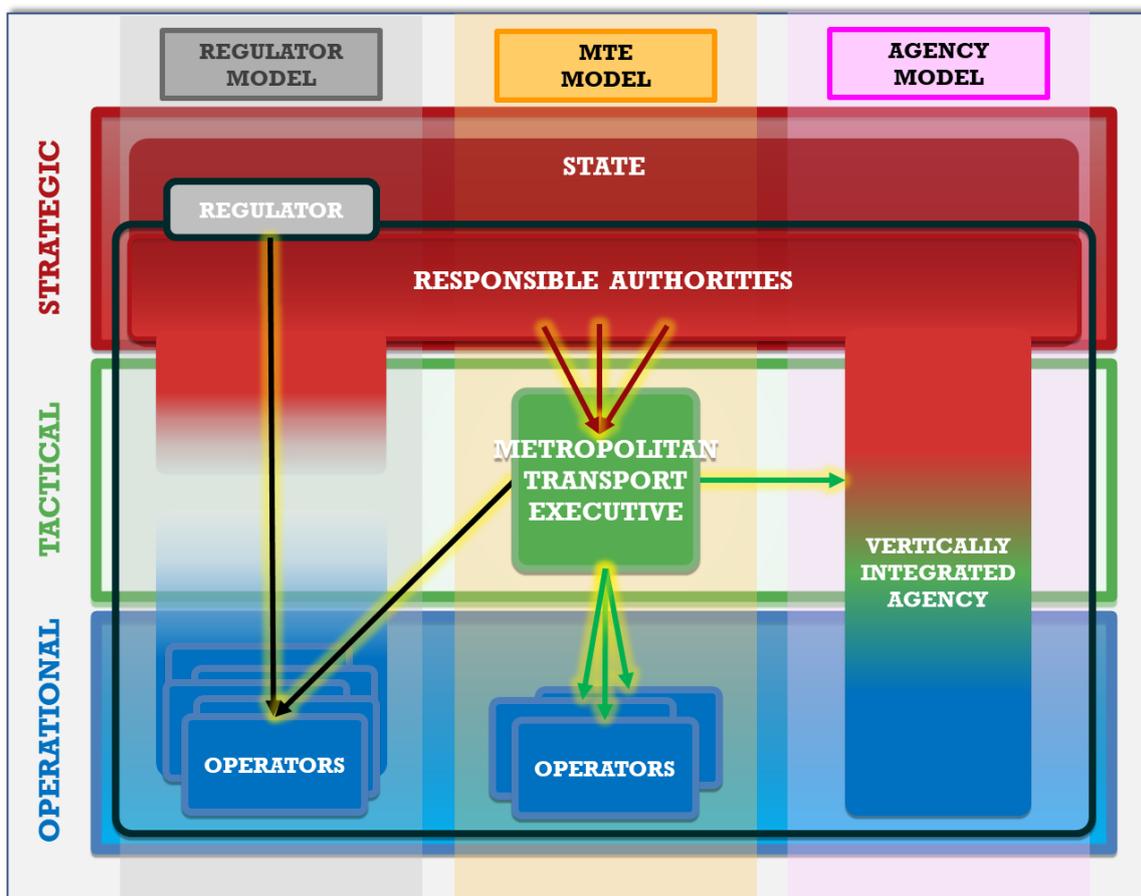
**Agency Model:** the responsible authorities take operations into their own hands, according to the tactical plans that they develop in-house. This State-controlled agency may be a government department, a public company or a wholly separate organisation, like in many other public network sectors, such as national railways.

**Metropolitan Transport Executive Model:** the legislator recognises that transport is a hybrid sector – part public network, part a service industry. Accordingly, a publicly controlled transport executive executes a wide array of tactical tasks as to facilitate transport operations that meet travellers’ and stakeholders’ mobility needs.

**Each Model can function alone and suffice to govern the transport system of entire cities. But in many cases, the Agency Model and the Regulator Model co-exist.** Typically, urban buses are managed and operated by a municipal public transport agency, while taxis and sub-urban buses are only regulated by other authorities. Regional rail may be run by the national railway agency or by a provincial bus transport agency, while additional regional bus services are provided by inter-urban operators that are regulated by other national level authorities.

When an MTE is introduced, it must literally squeeze into a pre-existing legal framework and material transport systems in which regulators, responsible authorities, agencies, and private operators are already established and accomplish the daily work following their own rules and habits. Therefore, the general model of metropolitan transport governance includes all three basic governance models, with the Metropolitan Transport Executive (MTE) at its centre.

**Figure 10: Regulator, MTE and Agency Governance Models**



Source: SMMR project

**If the MTE is simply an additional actor that introduces additional processes, it only makes the overall system more complex, more expensive, and less fit for purpose.** The MTE may not be created for its own sake. It has the task to manage the transport system better than the existing operators and vertically integrated agencies have managed in the past. In order to accomplish this task, it must:

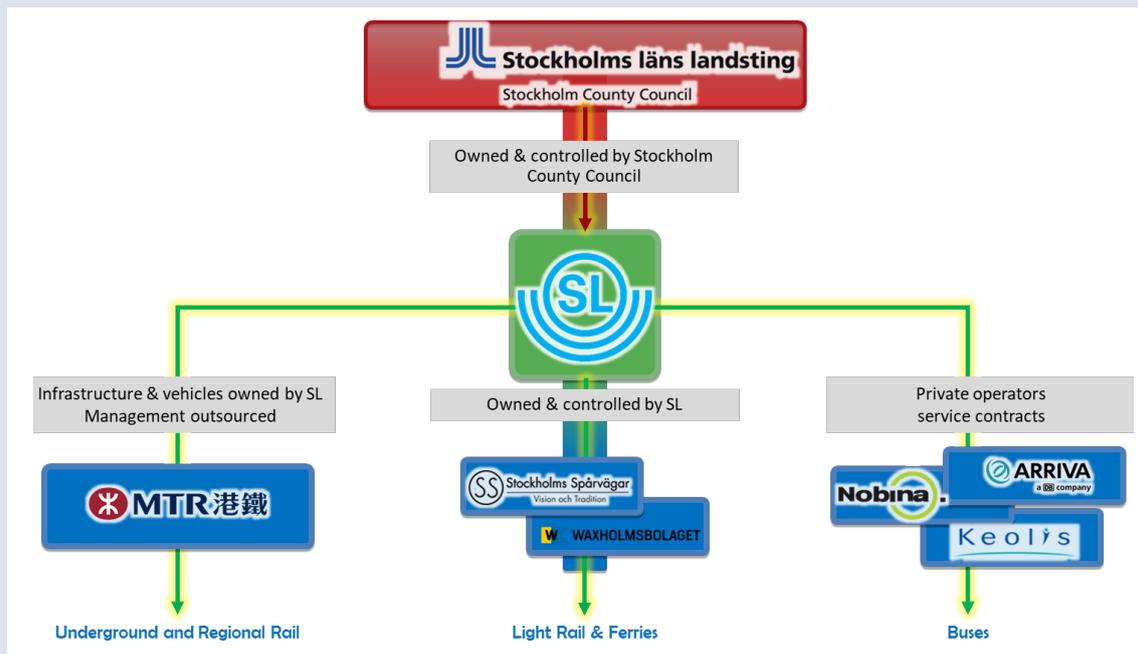
- Establish information-technology infrastructures for operational management and adequate communication at the operational level,
- Take on new, previously unattended tactical level tasks that have become necessary by the growth of the metropolitan region and its transport system, such as: development of a multi-modal regional transport masterplan, the creation and management of multimodal interchange hubs, the introduction of a multimodal ticketing system, the establishment of information-technology infrastructures for operational management and adequate communication at the operational level,
- Take over tactical level tasks that were previously attended by the public agency or by the operators, but with insufficient scope or in an insufficient manner,
- Coordinate with or integrate, but not disrupt, existing tactical level processes that are already very well taken care of by other actors.

Which tactical level tasks are entirely new, to be taken over, or not to be disrupted depends on the specific history and set-up of the transport system in any given metropolitan region. The MTE's role is to consolidate governance structures and service provision. This requires, on the one hand, a high degree of institutional and technological stability, and, on the other hand, a high degree of agility, openness to and pro-active coordination of innovation initiatives by any and all stakeholders.

**Figure 11: SL Stockholm: From Municipal Agency to Metropolitan Transport Executive**

SL, the Stockholm (Sweden) Metropolitan Transport Executive has evolved from the vertically integrated municipal local railway agency, in several successive reforms that aimed at maintaining political control and organisational capacities, while integrating modern forms of public management and private sector capacities into a fully integrated public transport system.

- Horizontal integration of the entire metropolitan region was achieved by transferring the responsibility for public transport to the Stockholm County Council. On the tactical level, SL has been enjoying the public monopoly for all forms of local public transport. On the operational level, horizontal integration was abandoned, by contracting each mode of transport to specialised operators.
- The vertical integration from the strategic level County Council through the tactical level SL to the light rail and ferry operation still exists through ownership relations. But control is exercised through explicit and publicly scrutinised contractual relationships between the levels of governance. This is justified by the fact that the specific operations of the “legacy” tramways and ferries should be carried on by the modernised historic agencies.



For underground and regional rail, the Swedish State has retained ownership of the assets, but SL does contract out its management in long term contracts. For buses, all assets and operations are privatised, and national and international operating companies must regularly compete for operating contracts with SL.

## 3.2. Vertical and Horizontal Integration and Specialisation

Many policy documents, including ARSSLT, call for integrated transport systems, planning and organisation, to achieve greater efficiency from all points of view of sustainable development.

« Transport cooperation in ASEAN has been and still is focusing predominantly on improving physical connectivity as well as trade and transport facilitation, in order to create an efficient integrated transport system that supports economic development and integration. »  
(ASEAN, 2019, p. 15)

But specialisation and subdivisions of the organisations in charge of the transport system according to levels of responsibility, geographic subdivisions and modes of transport are also necessary. A fully integrated transport system governed by one responsible authority and delivered by one operator according to a single masterplan is impossible. The challenge of any organisational reform is to implement the most effective balance between specialisation and integration.

**Vertical integration** designates a high degree of coordination of functions in any given sector or transport mode across the strategic, tactical, and organisational levels of governance, ultimately resulting in the integration of these functions in a single “vertically integrated”: National railways and municipal transport agencies are typical examples of such integration. (See discussion of the Agency model below).

**Horizontal integration** is the integration of functions, within governance levels, across several modes of transport or sectors. Horizontal integration is the object of many concepts and propositions:

- **Mobility-as-a-Service** (MaaS) is the integration of these modes of transport in a unique commercial proposition,
- **Transit Oriented Development** (TOD) is the integration of spatial planning, urbanism, and transport planning,
- **Intermodal transport hubs** are the integration of spatial planning, urbanism, and complementary and competing modes of transport,
- **Open Data** is the integration of many separate data streams stemming from different modes of transport to form an integrated pool of big data capable to inform relevant policies,
- **Electrification** has the potential for integrating transport and energy systems in view of contributing to an integrated climate policy, among other objectives.

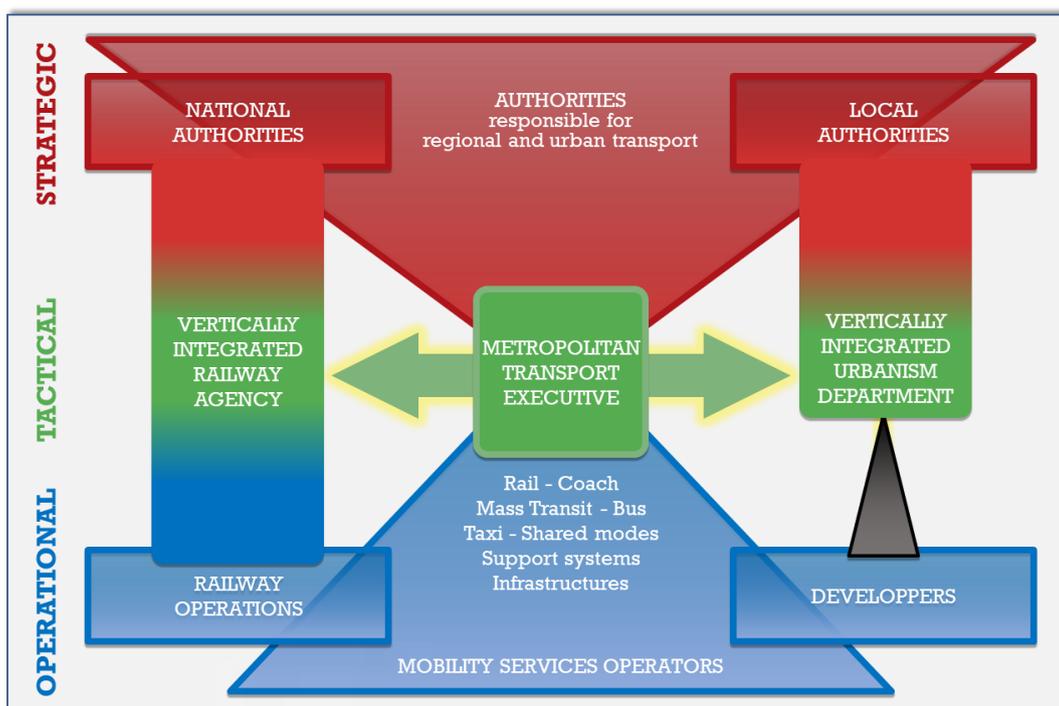
Coordinated policies are necessary for the implementation of balanced and effective Avoid – Shift – Improve strategies. Operators are very efficient in their respective fields because they are specialists. Authorities have specialised administrations. On the strategic and on the operational levels legal frameworks explicitly avoid too broad horizontal integration as to ensure sufficient checks-and-balances and innovation-driving competition between competing commercial and political forces.

Vertical integration is an obstacle to horizontal integration, as it is difficult to manage and gain acceptance for deeper vertical integration and larger horizontal integration at the same time. Some vertically integrated public transport agencies also have a certain degree of horizontal integration, combining, for instance, metropolitan railway, light rail, and buses as one network and developing excellent synergies between them. But the horizontal extension of vertically integrated agencies is limited. This is because with vertical integration, for any given mode of transport, the responsible authority is integrated with one tactical level department that is integrated with one operating company. As a result, it is difficult to extend the agency's scope horizontally, because the vertically integrated organisation either lacks authority, or tactical level competence, or the business model to do so.

The role of MTE is to overcome this vertical vs horizontal integration contradiction. For this purpose, MTE offer two specific tools:

- **MTE organise a strong vertical coordination between all three governance levels.** But this is achieved through contractual relations, not through integration in one organisation.
- **MTE achieve horizontal integration on the tactical level** by including an array of responsible authorities in its strategic governance and dispatching implementation of transport services to a variety of independent operating companies on the operational level.

Figure 12: Vertical and Horizontal Integrations



Source: SMMR project

**Figure 13: BPTJ aka Greater Jakarta Transport Authority**



The Presidential Decree 103 of 2015, has appointed BPTJ to be the coordinator between government agencies throughout the Jakarta, Bogor, Depok, Tangerang, and Bekasi area (Greater Jakarta) to organize and manage a high-quality transportation system, including an integrated public transportation network. The tasks of BPTJ are:

- 1) Coordination and synchronization of the preparation of general plans and activity program plans of Ministries/Institutions and Regional Governments in the context of developing and improving integrated transportation services in Greater Jakarta.
- 2) Coordination and synchronization of budget requirements planning in the context of implementing general plans and program activity plans in Greater Jakarta.
- 3) Technical facilitation, financing and/or management to improve the provision of urban public transportation services in Greater Jakarta.
- 4) Technical facilitation, financing and/or management in the context of developing and improving facilities and infrastructure supporting the provision of urban public transportation services in Greater Jakarta.
- 5) Technical facilitation, financing and/or management in the context of implementing traffic demand management in Greater Jakarta.
- 6) Preparation of implementation plans, planning budget requirements, and implementing transportation activity programs in the Transportation Master Plan for Greater Jakarta which are not included in the general plans and program plans for transportation activities from Ministries/Institutions and Local Governments.
- 7) Preparation of proposed regulations and policies in relation to the implementation of integrated transportation in the areas of Greater Jakarta.
- 8) Providing recommendations for spatial planning oriented to mass public transportation.
- 9) Granting public transportation licenses that exceed provincial boundaries in the areas of Jakarta, Bogor, Depok, Tangerang and Bekasi and providing recommendations for feeder services.
- 10) Monitoring, evaluation and reporting on the implementation of general plans and integrated transportation services and development programs
- 11) Correcting and imposing sanctions on violations of the Jakarta, Bogor, Depok, Tangerang and Bekasi Transportation Master Plans by agencies, operators, and other parties.
- 12) Implementation of other activities as determined by the Minister of Transportation.

Source: adapted from BPTJ <http://bptj.dephub.go.id/tentang-bptj>

### 3.3. Governance Model 1: Regulator Model

**In a governance model that relies on private companies to supply the services that the travellers demand, the regulator is the principal state-level actor in the transport system.**

Most service industries are governed according to regulator governance model (hospitality, personal care etc.). However, transport systems cannot work properly without tactical level functions, such as dedicated infrastructure and inter-operator coordination, also where operators are competitors on-the-road.

The principal task and course of action of the regulator are to attribute operating licenses to companies that desire to supply the transport services market. These licenses should be attributed, or withdrawn, depending on the capacity of the operator to provide service with minimum quality standards. These standards can be rather high for safety, reliability, customer information, liabilities, fare levels etc.

In a market economy, in theory, the more competitors propose their services to the customers, the better. However, exacerbated competition on-the-road among operators serving the same route can lead to practices that erode customer service standards. It is the regulator's task to maintain healthy competition among a reasonable number of service providers through limitation of licenses issued, and penalties for sub-standard operators.

Tactical level public intervention is often limited to provision of land for coach stations and bus stops. Regulators may develop a more pro-active attitude and extend their referee role to providing a level playing field and coaching for operators. Operators may organise in associations or syndicates to provide the same function in self-regulation.

Through high standards and strict inspections, the regulator can obtain tight control over the supply side of the transport market. Such high standards should also include elements of labour law and environmental protection. They can also include the respect of certain routes and timetables and the use of given infrastructures and support systems.

The Land Transportation Franchising and Regulatory Board in the Philippines is a typical example of a Regulator that is using its regulatory prerogatives not only to ensure the legal framework and smooth functioning of an operator-driven transport system, but also to lift the standards of customer service provided by private operators, and to oblige local authorities to increase their contribution to the improvement of the transport system.

Standards can be so high and enforced strictly, with so much involvement by the regulator and other public actors (e.g. infrastructure departments) that the regulator is no longer the referee of a relatively free market of supply meeting demand, but the director of a policy-driven transport system that is indeed in many ways similar to the transport executive model.

The **Regulator model works well until the point metropolitan region requires large-scale capital investment in mass transportation** such as rail, bus rapid transit (BRT), or other capital-intensive transport systems. To ensure projects are efficiently managed on time and on budget, a high degree of tactical level coordination is required. Such large-scale projects also require defining a clear hierarchical system in transport and multi-modal integration, all of which are difficult to implement under this form of governance.

**Figure 14: Philippines Land Transportation Franchising and Regulatory Board**



**MISSION**

Ensure that the commuting public has adequate, safe, convenient, environment-friendly and dependable public land transportation services at reasonable rates through the implementation of land-based transportation policies, programs, and projects responsive to an investment-led and demand-driven industry.

**VISION**

World-class land transportation services contributing to the overall development of the country, improvement of the socio-economic status of its stakeholders, and promotion of the welfare of the general public.

**OUR MANDATE**

To promulgate, administer, enforce, and monitor compliance of policies, laws, and regulations of public land transportation services.

*Source: LTFRB <https://ltfrb.gov.ph>*

But even in the most policy-driven regulator model governance:

- The regulator should not exclude an operator from the market by management decisions but limit the number of operators by raising the minimal service quality standards.
- The regulator may not subsidize the service suppliers, but authorities should invest in infrastructures, such as bus stops and lanes, coach terminals, walking and cycling access to these stops and stations, information services etc.
- Authorities may financially support for the purchase of transport services by certain groups of users.

In the United Kingdom, the Transport Act of 1985 dismantled the vertically integrated municipal bus transport agencies, by privatising the bus fleets, depots and operations and containing the remaining public agency in a purely regulatory role. Ironically, this policy is commonly called deregulation. Since, many institutional reforms and market evolutions have brought about a unique

governance model in which the transport service regulators have become part of Combined Authorities that are also in charge of road and transport infrastructure on behalf of the local governments forming a greater metropolitan area. The Combined Authorities show how less vertical integration between the tactical and operational level can allow for greater horizontal integration on the strategic and tactical levels.

These Transport Executives are typical examples of highly evolved Regulator Model as described above, including many typical tactical level capacities, including a particular form of contracting with transport service providers.

**Figure 15: NEXUS – A Transport Executive within a Regulator Model**



“Nexus is the Tyne and Wear (United Kingdom) Passenger Transport Executive and administers funds on behalf of the Joint Transport Committee (JTC) of the North-East Combined Authority and the North of Tyne Combined Authority. Our task is to improve the quality of life and fortunes of everyone in Tyne and Wear, by creating better transport networks.

“The JTC funds Nexus through a levy on the five district councils of Tyne and Wear; Gateshead, Newcastle, North Tyneside, South Tyneside and Sunderland. The amount each council gives is in proportion to its population. This levy funding pays for the local transport Nexus provides including free or cheaper concessionary travel, subsidised bus services (about 10% of routes in Tyne and Wear including school buses), bus stations and stops, the Shields Ferry and specialist services for disabled people.

“A Voluntary Partnership Agreement (VPA) is a written agreement that would be entered into between Nexus, local authorities and bus operators. In a VPA Nexus and local authorities would commit to providing infrastructure like priority lanes, stops and interchanges and negotiate arrangements for use of that infrastructure. Bus operators would meet this with commitments on vehicle standards, maximum fares, frequencies and timings.”

*For further information on NEXUS : <https://www.nexus.org.uk/what-nexus/how-we-are-funded>*

*On Combined Authorities in UK : <https://www.local.gov.uk/topics/devolution/devolution-online-hub/devolution-explained/combined-authorities>*

*Source: Nexus*

## 3.4. Governance Model 2: Agency Model

**In the agency model all tactical and operational tasks are given to an agency that is fully owned, controlled and financed by one Responsible Authority.** Agencies are often implemented when an authority decides to take responsibilities in its own hands after the failure of a simple regulator model governance to supply the services that the responsible authorities desire.

The agency model is particularly suitable for capital-intensive systems with strong interdependence between infrastructure and operations, such as large city bus, tramway and metro operations. Stand-alone capital-intensive systems, such as ferries, could just as well be implemented and operated by private consortia; and low-capital, infrastructure-independent services, such as taxis, are rarely operated by public agencies.

The agency model is based on common objectives, corporate culture, easy communication, and quick decision-making processes shared by the actors on all governance levels. This allows for straightforward permanent coordination within the agency, between planning and operations and reduces transaction costs. The agency would be expected to work in an agile way as no formal contracts or objectives are required between the different levels of the system. It also allows for closer coordination with other sectors that are managed under the same local authority (traffic police, energy distribution, schools, hospitals, housing etc.). Finally, private operators and profits being excluded from the system, and responsible authorities being prepared to finance the public service, travel fares can be low.

From the market theory point of view, agencies are suited for the management of so-called natural monopolies that are best served by well established, experienced operators and do not provide a market large enough for the organisation of meaningful inter-operator competition. Public utilities such as water and electricity supply are textbook examples for natural monopolies: “A natural monopoly is a monopoly in an industry in which high infrastructural costs and other barriers to entry relative to the size of the market give the largest supplier in an industry, often the first supplier in a market, an overwhelming advantage over potential competitors. This frequently occurs in industries where capital costs predominate, creating economies of scale that are large in relation to the size of the market; examples include public utilities such as water services and electricity” (Perloff, 2012). In the case of public transport services, the threshold between natural monopoly and effective market economy varies greatly between modes of transport, ranging from capital extensive taxi services, through buses to capital intensive railways. Infrastructures and common services are among the most capital-intensive elements of the transport system.

Furthermore, agencies eliminate many transaction costs and allow for optimal coordination between all elements of the system, from strategy through planning to operation. But, they also eliminate mechanisms of checks and balances and expose the transport system to the risk of dysfunctions that may remain unaddressed.

Vertical and horizontal integration combining bus, ferry, light rail, metro and car parks allow to build complete and efficient multi-modal urban transport systems. However, from simultaneous vertical and horizontal integration arise many management challenges. With vertical integration between tactical and operational levels, each mode of transport tends to develop, maintain and defend its own corporatist structures and influences within the horizontally integrated organisation.

Horizontal coordination and arbitration between modes in the name of unity and coherent design may stifle the specific strengths of each transport mode and suppress the dynamizing competition between them.

For instance, when metropolitan railways and buses are united under the same authority and in the same agency, two scenarios may occur:

- Rail and buses are understood as forming a versatile network that offers travellers to use one, or the other, or a combination of both to best match their needs. As a result, if planned and operated in an optimal manner, such an integrated system offers high levels of service and efficiency.
- Rail having mobilised very considerable capital investment that need to be written off, buses may be relegated to a role of feeders to the rail system and forbidden to provide services that might successfully compete with the rail services. This will improve the standing of the urban rail system, but it reduces the array of public transport choices for travellers and the effectiveness of the system overall.

Integration is not only a matter of united authority over the transport system. There are different styles and modalities of integration and the challenge for the MTE is to reap, at the same time, the benefits of excellent planning and of market economy dynamism.

#### **Figure 16: Bangkok - Vertical Integration for Major Projects of National Scope**



The government has considered that the road traffic in Bangkok was very congested so that the operation of MRT should speed-up to ease the people in travelling without private cars. Thus, with the Resolution on 28 July 1992 the cabinet approved to establish a state enterprise under the supervision of the Office of Prime Minister to be responsible for the conduct of the Mass Rapid Transit Project in Bangkok and its vicinities.

Meanwhile the need of mass rapid transit has been immensely increasing. Therefore, the Royal Decree Establishing the Mass Rapid Transit Authority of Thailand B.E. 2543 (2000) was announced establishing Mass Rapid Transit Authority of Thailand, with abbreviation “MRTA” with the task of improving the authority and the duties of the Metropolitan Rapid Transit Authority to be able to operate the transit business more systematic and efficient.

In 2002 after the reform in Government agencies, the authority of the Prime Minister in supervision of the Mass Rapid Transit Authority of Thailand was transferred to the Minister of Transport.”

Source: Mass Rapid Transit Authority of Thailand [https://mrta.co.th/en/about\\_mrta/history](https://mrta.co.th/en/about_mrta/history)

**Because of their tight vertical integration from the strategic to the tactical level, agencies may be rather hermetic organisations that do not easily cooperate with each other.** This may cause concerns where several authorities of different levels of government create their own public transport agencies operating in the same territory. Or where metropolitan regions grow to encompass several local constituencies with their own local transport agencies.

Many agencies have grown inefficient due to high levels of bureaucracy, lack of oversight, a focus on internal issues rather than the users, meddling by political or other vested interests, and incapacity to engage in horizontal coordination with other transport service providers. Instead of engaging in cooperation or competition with other operators, agencies tend to use their vertical reach to the strategic level to claim privileges of monopoly for the public transport services that they supply.

**The agency model reaches its limits when the demand for transport services exceeds the qualitative and quantitative capacities of the agency, and subsidies become subject to tighter scrutiny and standards, for instance, when:**

- The transport system grows and becomes metropolitan and requires the involvement of several responsible authorities that will not agree to co-finance projects or day-to-day operations without proper accountability and cost control,
- The transport policy becomes more multi-modal, requiring a stronger coordination with transport modes and their suppliers that cannot be integrated nor excluded,
- The benchmarked efficiency of the agency compares poorly against other systems of similar scale and size.

The agency model can be reformed, as to maintain its strengths and compensate or abolish its weaknesses. Many international examples show transport agencies have evolved in either of three (3) scenarios:

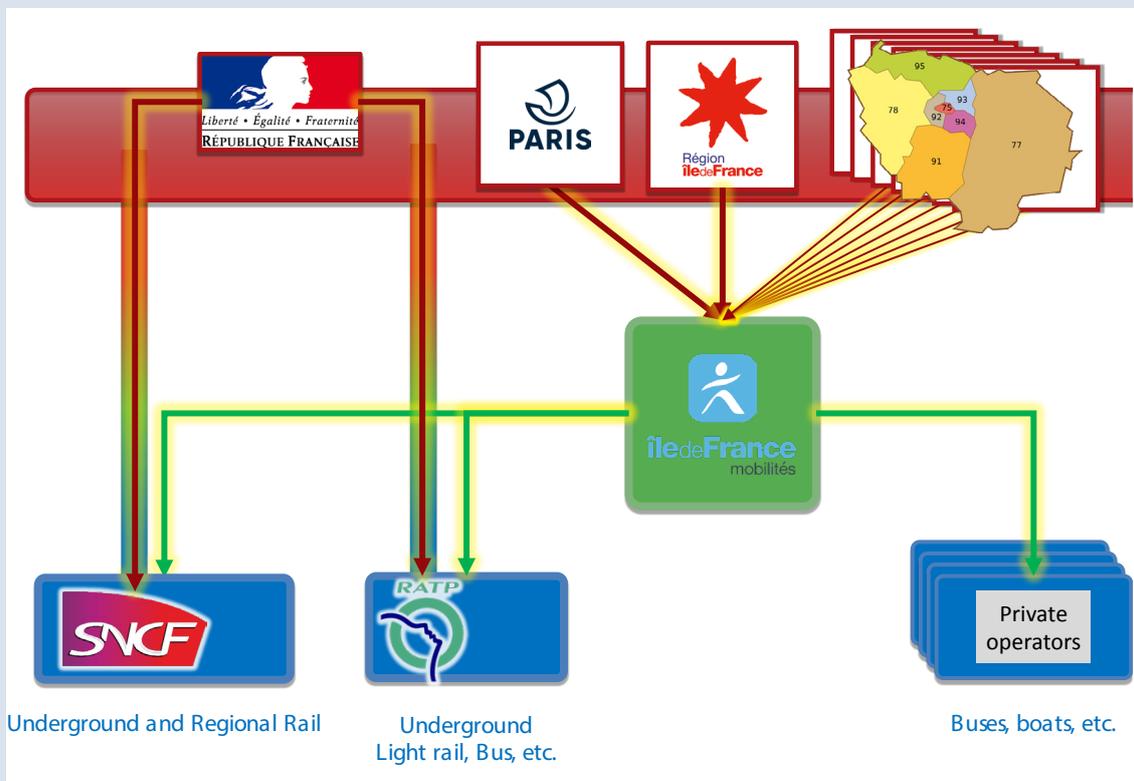
- Where metropolitan regions are served by several agencies, **these agencies may choose to coordinate and form a syndicate or association of agencies** that fulfils key tactical functions at a regional scale. This move perpetuates the municipal agency model at a metropolitan scale. Until the trends described above force this intermediate governance structure to engage in further reforms. (Examples: so-called fare-unions and Verkehrsverbund covering vast multi-centric metropolitan regions in Germany, and other European countries.)
- The monopolistic agency maintains and even strengthens its ties with the strategic level responsible authority and severs its integration with the operational level. These agencies **evolve from being the public operating company to becoming the tactical level public transport executive (MTE)**. (Examples for this evolution are in the Transport for London, Transport for Greater Manchester (UK), SL in Stockholm (Sweden)).
- Agencies that are controlled by authorities that do not cover entire metropolitan regions or several modes of transport **become contractors of purpose-built MTE**, and the responsible authority will gradually shift from direct support to its agency to contracting its services through the MTE. These agencies will concentrate on their core business

and develop their operational excellence. Ultimately, they will likely be assimilated with their private competitors (Examples: GVA Amsterdam (NL), MVB Munich (DE), RATP Paris (FR), and VBZ Zurich (CH)).

**Figure 17: Paris - Agencies Moving Under a Purpose-built MTE**

Public transport in Paris used to be planned and run by the state-owned agencies RATP (Autonomous Parisian Transportation Administration) and SNCF (French National Railway Company) alone. Several trends have led to gradual implementation of the Paris MTE named *Île de France Mobilités*:

- Local governments of Paris, the neighbouring departments and the metropolitan region demanded for greater control over transport planning and coordination between the agencies and the bus operations the greater region.
- Transport policies of these responsible authorities became increasingly more multi-modal and horizontally integrated beyond public transport, which is expressed in the name of the purpose-built MTE stressing the objective of people's mobility over the administration of transport modes.
- The traditional transport agencies have evolved to become state-owned transport operators that behave as private companies on many international markets, and as contractors of the Paris MTE, for their traditional core-business and for new forms of contracts proposed by the MTE.



## 3.5. Governance Model 3: Metropolitan Transport Executive (MTE)

**The MTE combines the advantages of the Regulator Model and the Agency Model while introducing substantial innovations:**

- The MTE is a specialized organization that is specially designed to fulfil the tactical level tasks better than an integrated agency or an operator or a ministry department could. A Transport Executive is fully controlled and financed by (several) public authorities and enjoy a legal mandate for their core activities. From the responsible authorities' point of view, an MTE is indeed a tactical level agency under their control. The co-ownership of the MTE by several responsible authorities and modern forms of public management ensure that the MTE is governed and controlled by the strategic level, but not managed by it.
- An MTE does not operate transport services. It uses the combined prerogatives and capacities that the responsible authorities delegate to them to manage transport infrastructure, facilitate transport operations and license or contract operators for delivery of transport services. From the operators' point of view, an MTE may be seen as a client, an authority, or a regulator, depending on style of governance developed by the MTE. Technically speaking, an MTE neither is a regulator, nor an authority. MTE are instrumental in the execution of tasks of the actual regulator or responsible authorities, who may delegate some prerogatives to the MTE and concentrate on their inalienable regulatory and strategic duties.

In fast-growing, large, multimodal transport systems, tactical level tasks can be numerous, varied, and of crucial importance for the development of the entire transport services sector and, indeed, all aspects of the spatial, economic and social development of the metropolitan region. Compared to the regulator and the agency model, the MTE model's main characteristic is the central role and emphasis given to a **single organisation that is specifically designed to fulfil tactical level tasks that can be correlated with the Avoid – Shift – Improve strategy, and typically include:**

- **Regarding the strategic level:** Coordination of all responsible authorities present in the metropolitan transport system, elaboration of development- and investment plans, technical advice to authorities and regulators. Strategies that aim at shifting resources and travel choices to the most efficient transport solutions largely depend on this work.
- **Regarding other tactical level actors:** Coordination with other sectors, such as neighbouring transport executives, integrated transport agencies, land-use planning departments, infrastructure managers, real estate managers etc. This horizontal coordination beyond the transport sector is required to achieve progress in the field of avoiding many and long trips in the course of everyday routines.
- **Regarding the operational level:** Coordination, monitoring, evaluation, and contracting with operators of all transport modes in the entire system leads to the improvement of each mode of transport.

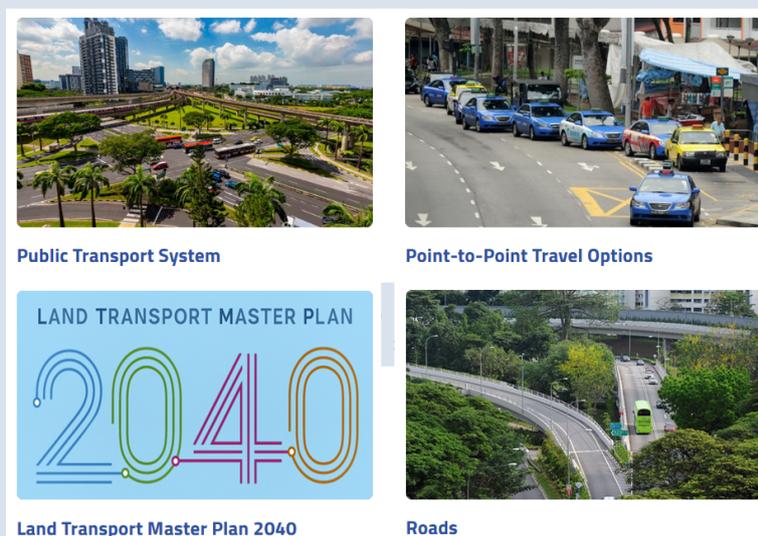
For the execution of these tasks, MTE can be lean organisations, much of their capacity being based on their central, unique position in the governance and clear, straightforward relationships with all other actors in the system. This unique position allows MTE to achieve **larger and more dynamic horizontal coordination across transport modes and beyond administrative boundaries on all levels**, than other governance models.

**Figure 18: Singapore Land Transport Authority**



“The Land Transport Authority (LTA) spearheads land transport developments in Singapore. We plan, design, build and maintain Singapore’s land transport infrastructure and systems. We aspire to strengthen Singapore’s land transport connectivity and integrate a greener and more inclusive public transport system complemented by walk and cycle options. We harness technology to strengthen our rail and bus infrastructure and develop exciting options for future land transport.”

“We are driven by the vision of a people-centric land transport network that connects communities and places. We look across the board to manage traffic flow, provide reliable public transport and support active mobility options for a car-lite city. Apart from charting the future of land transport through master plans, we continually look at ways, including using technology, to enhance the reliability of the public transport system, support options for walking and cycling while improving road connectivity and service levels of point-to-point travel options.”



Source: [https://www.lta.gov.sg/content/ltagov/en/who\\_we\\_are.html](https://www.lta.gov.sg/content/ltagov/en/who_we_are.html)

This enhanced horizontal coordination can lead to actual organisational integration of more sectors in the MTE itself. For instance, the Singapore Land Transport Authority (LTA), like the Dubai Road and Transport Authority (RTA), Transport for London (TfL) are not only **responsible for all modes of public transport, but also for “point-to-point” transport services, the promotion of walking and cycling and, last but not the least, vehicle licensing, road construction, maintenance, and pricing**. These examples have in common to be governed by a single national or capital-city strategic level authority that do have the legislative authority to create such a rich portfolio.

To achieve a fair degree of horizontal integration, less powerful urban and regional authorities need to combine their prerogatives and capacities in a common regional transport executive that can engage dialogue and cooperation with the national authorities in charge of intercity transport, highways, traffic regulations, land use planning, etc.

MTE should not limit their role to being intermediary between the strategic and the operational level actors and develop their profile as technocratic competence centres. MTE should also develop a permanent, direct dialogue with individual users and organised stakeholders of the transport system and thus become an intermediary between civil society and the institutional actors of the transport system:

- Organise stakeholder consultations transport policies, plans and projects,
- Systematically retrieve, follow-up and evaluate customer complaints regarding operator service quality and network design flaws.

By developing such forms of dialogue, the MTE builds its own knowledge deeply rooted in real-life experience. It also contributes decisively to interactive processes, such as the elaboration of Sustainable Urban Mobility Plans (SUMP) and continuous quality management and improvement.

### *MTE Model: The Strategic Level*

The national government defines the legislative and regulatory framework ruling the general ambition, norms, and financial foundation for the entire transport system.

- The national legislator adopts the legislation, the policy objectives, and in some cases, the subsequent empowerment of the transport executive.
- The national government provides masterplans and higher goals to be taken into account in local transport policies.
- National and sub-national responsible authorities regularly evaluate the transport executive, from their specific policy achievement, financial performance and service delivery perspective.
- The responsible authorities should acknowledge and instrumentalise the transport executive as the only, or leading, public entity in charge of the organisation of public transport in the city and the metropolitan region.

The overarching goals may also make references to international treaties or agreements, such as the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC – COP24, <https://unfccc.int/>) and the United Nations' Sustainable Development Goals (SDG, <https://sdgs.un.org/goals>) or regional agreements (such as the KLTSP (ASEAN, 2015)). Based on the development goals of the country, national budgets are allocated for transport infrastructure and services.

**Empowerment of local authorities is a prerequisite to effectively address local or regional challenges and it can be achieved through a sufficient level of decentralisation or de-concentration.** Creating clarity about the responsibilities, prerogatives and resources of local or regional authorities, while aligning local action plans with the national government priorities will allow for smooth and productive work of any MTE.

To achieve the objectives outlined in the strategy and action plan, each actor must assume a specific role. This balance between all actors will help assure strategic governance and economic sustainability while maintaining focus on end-user needs and expectations.

It is in the interest of each responsible authority involved to provide an MTE with the capacity, stability, and modern management that establishes it as a largely autonomous body that is guided and controlled by its political level shareholders but protected from informal influences through political pressures or retention of information by other administrations.

#### *MTE Model: The Tactical Level*

**On the tactical level, the MTE works towards the achievement of the strategic goals as set by the responsible authorities in qualitative and quantitative objectives.**

- The MTE develops and maintains the **long-term strategy** and regularly reports progress and achievements to both authorities and stakeholders.
- The MTE develops capabilities in **data collection, management, and processing, to become a data-driven organisation**. This approach will help to plan, manage, and continuously evaluate service delivery and guarantee accountability. In that context, it matters to upskill the staff.
- The MTE **defines and manages the integrated transport system**, including service planning and reorganisations (routes, and timetables), new mobility services, and infrastructure planning. It defines expected performance and quality standards as part of competitive licensing and contracting of transport operators.
- The MTE **monitors the operators involved and holds them accountable** to their regulatory and contractual obligations, thus shielding the responsible authorities from regulatory and financial difficulties.
- The MTE manages direct payments from operators, fare revenues from travellers, and subsidies from the responsible authorities; it may also generate additional revenue or investment to ensure better **financial sustainability of public transport**.

Within the generic model discussed above, key technical responsibilities that should be assigned to the MTE include:

- Organise and secure the business model for urban mobility.
- Plan, implement, and manage multi-modal public transport services (service planning, service reorganisation, new mobility services) and infrastructure:
  - o Rail infrastructure,
  - o Bus priority lanes,
  - o Intermodal interchanges and hubs,
  - o Other facilitating and support services.
- Audit integration of public transport with regional and urban planning.
- Establish an integrated fare system and outline a fare policy.-
- Set up a multimodal and comprehensive passenger information system.
- Create and maintain an overall image of the public transport system.
- Ensure safety and security of the system and the users.
- Develop skills in the workforce.

### *MTE Model: The Operational Level*

Transport operators are responsible for the delivery of transport services to travellers and other stakeholders. Depending on the assignment of tasks and types of operational contracts, operators may also participate in some of the tactical tasks assigned to MTE.

- Operators **serve zones or follow routes and timetables as assigned** and in line with performance and quality requirements defined in their respective license and contractual agreements with the transport executive.
- Operators **implement and manage assets** of the transport system (infrastructure, rolling stock, ancillary systems),
- Operators are responsible to **train and manage their staff** to ensure they have the required skills and working conditions to deliver the correct service,
- Operators **implement the branding, information and communication policy** defined for integrated public transport services (if any),
- Operators **collect fares from passengers**, using the tools provided by or agreed with the MTE.

Private bus operators are licensed or contracted for a fixed duration of services. An absence of the guaranteed continuity of operating rights creates a tension in the market whereby the operator constantly keeps up the performance or risks losing the operational rights for future business.

In the case of very large bus operations, rail operations or public agencies delivering operating services, the discontinuation of contracts is only a sanction of last resort. For everyday business, **operating contracts will include bonus-malus schemes that give financial incentives to operators to deliver high quality services to customers** and to the MTE and the transport system. Such bonus-malus schemes may be based on metrics such as:

- Patronage and customer revenue
- Adherence to timetables
- Cleanliness, comfort, safety
- Environmental performance
- Staff development and social responsibility

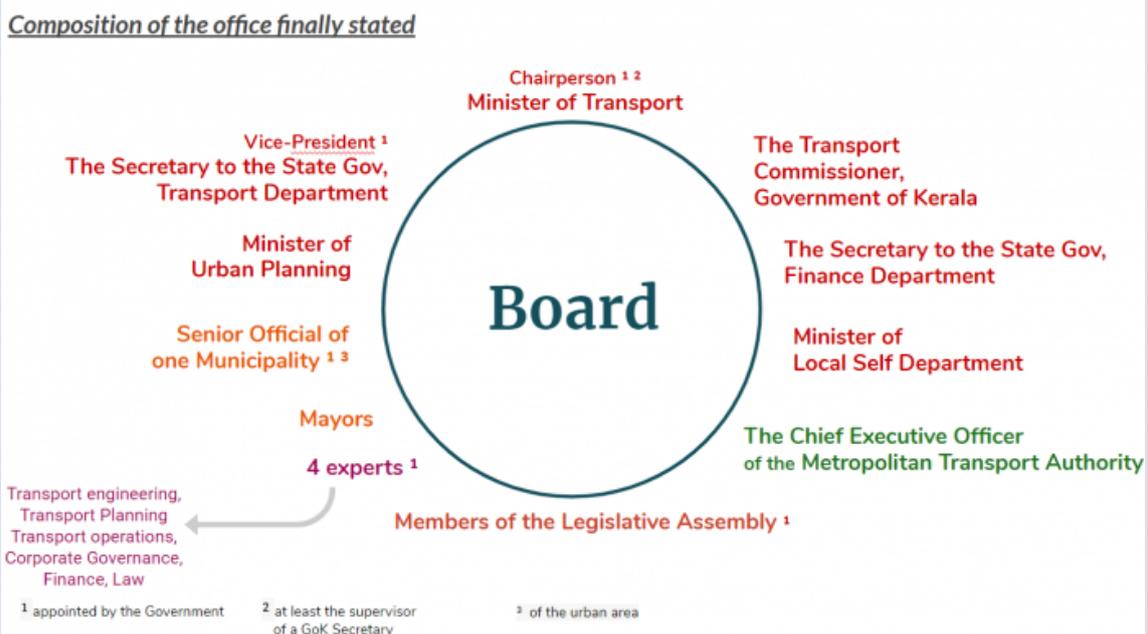
Some MTE contract with internationally experienced operators which are intended to also serve as a means of technology transfer and capacity development. In the longer run, this will benefit the local operators who are using the home-grown talent, can adequately compete with the international operators. More competition in the market drives innovation and creativity, and best practices for transport operation. Singapore's bus contracting model (BCM) was specifically designed to achieve this. Prior to BCM there were two local operators, Singapore Mass Rapid Transit (SMRT) and Singapore Bus Services (SBS) and Singapore suffered from underinvestment in bus services and a lack of innovative ideas. As a part of BCM, LTA bought back all the bus assets and introduced contestability in the market which saw the entry of two international operators who introduced several innovative approaches to improve industrial relations with the staff, improve operational efficiencies and enhance customer experience. After the BCM, customer satisfaction in 2019 reached 99.3% as compared to 90.7% in 2015.

**Figure 19: Kochi Metropolitan Transport Authority**

Kochi is the largest and most populous metropolitan area in the Indian state of Kerala served by a diverse means of transport: train, public and private buses (for short, medium, and long-distance journeys), metro, boats, auto-rickshaws, taxi, and cycling and walking but which lacked integration and connectivity, leading to inefficiency.

As a part of National Urban Mobility Policy, the central government had set a precondition for approval of a metro system to integrate all public modes of transport with a single ‘command and control’ centre and introduce a common ticketing system for the convenience of commuters. With the opening of Metro rail in 2017, its operator, Kochi Metro Rail Limited (KMRL), formed a committee for the transport authority and drafted the Kerala Metropolitan Transport Authority (KMTA) bill which was passed in November 2019.

Starting November 2020, the KMTA will be an independent body which will be responsible for operation, maintenance, development, and supervision of public transport modes in the urban. The body is chaired by the state’s transport minister with the transport secretary acting as vice-chairperson. It can have a maximum of 15 members including the district collector, city police commissioner, secretaries of local bodies, mayor, local MLA and representatives from state bus corporation.



*The KMTA Board*

A single ticketing system for most modes of transport, the KochiOne smart card, has been implemented. Route rationalisation of buses will be done and there will be a common timetable to ensure seamless connectivity between different modes. A public information system including a common mobility app has been launched. A parking policy will be introduced, and operators will be issued licenses. There will be a single command and control centre to supervise the entire system. Private bus owners have been aggregated into seven bus operating companies and 27,000 autorickshaws under six trade unions have been aggregated into a Drivers’ Cooperative Society.



# Case Study: South Korea Metropolitan Transport Commission



Source: <http://news.samsungcnt.com/public-transportation-in-seoul-a-miracle-for-12-million/>

## Introduction

The Metropolitan Transport Commission (MTC) is created as a governance system, under the Republic of Korea (ROK) Ministry of Land, Infrastructure and Transport (MOLIT), where the central government, local authorities, and the private sector work together in addressing metropolitan transportation issues in 2019. This is critical as approximately 80% of the South Korean people live in metropolitan areas, which are challenged by **problems of congestion, road accidents, and air pollution and long commuting times between city centres and outskirts.**

The **lack of relevant inter-city transport services across administrative boundaries aggravates issues such as housing shortages** and transport issues related to developments of new towns. The MTC serves as a platform to facilitate and mediate issues such as delay in negotiations and conflicting needs and opinions between local authorities regarding the methods of handling transportation demand and finance. The structure and tasks of the MTC allow it to promote integration across 5 key areas: administration, fare, transport and land use, mode, and data and technology.

**The MTC is an evolution of the Metropolitan Transport Association (MTA)**, founded in 2005, after the reform of Seoul public transportation in 2004 (KOTI, 2012). The main responsibility is to co-ordinate public transport policies across the provinces of Seoul, Incheon and Gyeonggi, known as Seoul Capital Area (SCA) within the legal foundation of the Local Autonomy Act of 2008. This legislation allowed MTA to be created if a service requires co-operation by two or more local governments.

**According to an analysis conducted by the International Transport Forum's (ITF), the MTA had the following limitations:**

- The MTA **staff** was largely made up of former civil servants from provincial administrations on two-year postings only, which made it challenging to develop stability and long-term strategies between 2005 to 2017.
- The **funding** capacity of MTA was based only on voluntary contributions by the three local governments.
- The MTA did not have **legal power** to challenge decisions of any given local government

## Limited Governance across the Seoul Capital Area (SCA)

The Seoul Capital Area (SCA) has three jurisdictions with a population exceeding 50% of the country's total population (Kyu-won, 2021). According to the Korean Statistical Information Service (KOSIS), in 2019, the SCA population was composed of 9.7 million in Seoul, 13.2 million in Gyeonggi and 2.9 million in Incheon. The challenge was the integration of the three areas where Seoul and Incheon are responsible for planning and implementing transport projects within their jurisdiction and managing urban transport, while Gyeonggi-do has 27 cities and 5 counties which all have responsibilities for transport projects and management.

MTA was aimed at developing cross-boundary metropolitan public transport plans, establishing BRT and transfer facilities, undertaking consultation and adjustment on inter-regional projects, and the co-ordination of bus route planning and fare collection for all inter-municipal transport systems. Due to limited metropolitan governance, MTA was unable to effectively expansion of area-wide bus routes and a broader bus rapid transit (BRT) system; the improvement of multi-modal transfer centres; construction of inter-regional metros and roads; and resolve conflicts related to revenue from integrated transit fares (ITF, 2018).

## Establishment of Metropolitan Transport Commission (MTC)

The Metropolitan Transport Commission (MTC) was established in March 2019 with the vision to create a metropolitan transport system that connects people across boundaries, leading to shared growth in relevant areas well beyond the scope of the former MTA (MTC, 2019). The Commission comprises 5 regional committees: Seoul Capital Area (SCA), Busan and Ulsan Area, Daejeon Area, Gwangju Area, and Daegu Area. The key to success for MTC is to ensure all stakeholders work cooperatively with 5 key integration pillars: Administrative, Modal, Transport and Land Use, Fare and Data and Technology.

### *Administrative Integration*

The MTC has 5 Regional Committees as well as a Working Committee and a Conflict Management Consultation Committee to ensure the central government, local governments, and the private sector can actively cooperate in resolving the wider metropolitan areas' transportation problems. Together the committees work to deliver the Basic Plan and Implementation Plan; the Basic Plan is established every 20 years and the Implementation Plan is created every 5 years.

### *Modal Integration*

The MTC ensures that the transport system is integrated across metropolitan areas. The plan includes the implementation of the Great Train Express (GTX) network as the trunk axis and to be surrounded with Super-BRT and tram lines, as well as introducing the Bus Transit Express (BTX). The integration also requires construction of intermodal transit centres where networks of GTX and BTX meet with metropolitan buses and trains to foster efficient commute across metropolitan areas.

### *Transport and Land-Use Integration*

The MTC aims to address the issue that transport network developments and policies often neglect or lag the regional spatial developments. Therefore, the 2030 Wide-area Transportation Plan attempts to reflect characteristics of each metropolitan region, and to arrange effective bus networks for newly established cities anticipatively or just in time.

### *Fare Integration*

The MTC encourages the shift to cost-effective commuting across metropolitan areas through fare integration and the creation of the wide-area metropolitan transport card (MTC card). The MTC card will offer discounts and rewards and the administration of third-party fare subsidies to commuters.

### *Data and Tech Integration*

The MTC will be responsible to analyse different new mobility options and the integration they may have with mass public transport systems to ensure metropolitan areas will be offering optimal travel plans and payment systems. Furthermore, MTC is tasked to incorporate self-driving vehicles such as autonomous buses into the public transportation system.

Figure 20: Tasks and Structure of the Metropolitan Transport Commission (MTC)

### Strengthening Infrastructure

- Construction of a metropolitan railway network with the travel time of only about 30 minutes between the major stops,
- Recovery of arterial roads' functions through strengthening road networks.

### Improving operation

- Significant increase in the number of metropolitan buses and improvement in services,
- Creation of a fast and convenient transfer system,
- Reduce of transportation costs and enhancing publicness.

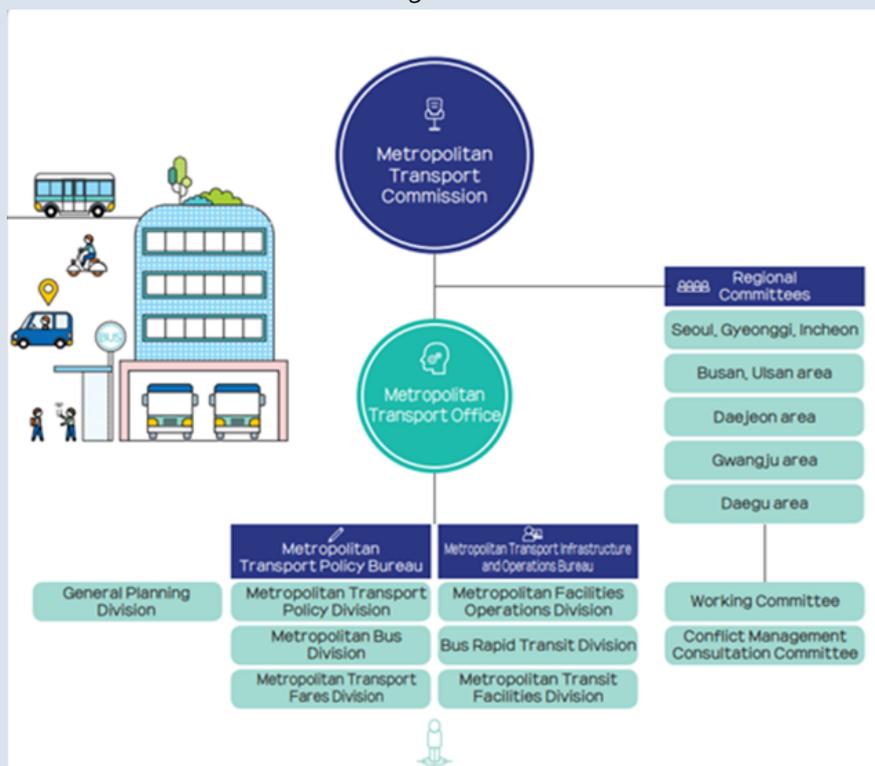
### Innovating Systems

- Provide proactive metropolitan transport measures,
- Restructuring of investment systems for metropolitan transportation facilities,
- Enhancement of metropolitan transport policy performances.

### Preparing for the Future

- Implementation of a public transportation hub city with better air quality,
- Providing seamless point-to-point transportation services.

Seoul MTC Organisation Overview





# 4) The Foundations of MTE

## 4.1. Land-Use Planning and Transport Governance

**Within a metropolitan region, mobility needs are varied, and their satisfaction requires a large array of transport services ranging from individual short distance to collective inter-urban.** To form an effective and efficient transport system, these services must be connected and coordinated to allow travellers to choose and combine among them as they see fit. To coordinate this inter-connection and to facilitate the selective choices of the traveller is the role of the MTE.

Not only should these services be integrated, but they also should fit into their spatial and urban context. Metropolitan regions are characterised by widespread polycentric structures and the distribution of economic and social functions. The spatial distribution of these functions and the structure of the transport system are strongly interdependent. Location choices have long-term impacts on the entire regional system.

There are significant advantages of a dense and compact urban fabric and many cities in ASEAN have taken advantage of organising transport services around land-use densification. Singapore has pursued this as a matter of policy to develop its mass transit system and, to some extent, Bangkok, Kuala Lumpur, Manila, Jakarta, and other larger ASEAN metropolises have also adopted them. Metropolitan economies are highly productive and must not forget to ensure long-term financial stability and a dynamic commercial business model for their transport system to ensure sustained success.

**Integrated or coordinated governance of land-use and transport on the metropolitan region level brings several advantages:**

- It allows to translate strategic visions and practical constraints into one efficient and coherent spatial and transport system avoiding gaps and redundancies:
  - secure urban space needed for public transport infrastructure,
  - ensure new developments are included in transport networks from day one.
- It facilitates transit-oriented development (TOD) around the access points to the public transport system, supporting accessibility and attractiveness of those sites and creating added value essential for the funding of the necessary infrastructure investment and system operations.
- It strengthens the capacity of the regional authorities to engage with international development and investment partners who require convincing integrated long-term plans.

To achieve good coordination between land-use and transport planning, both functions can be integrated in the same land-use and transport executive. If this appears unpracticable, a strong coordination between the authorities and executives in both fields can be institutionalised:

- Cape-Town (South Africa): the land-use framework is defined by the MTE, (Cape Town City Transportation Department).
- Hong Kong: the Transport Department is a function of the Transport and Housing Bureau and recently the Hong Kong Government acknowledged that the organisation of public transport, housing, and land supply are highly related (Kin-chung, 2018).
- Singapore: LTA works closely with planning authorities at both the national and regional levels.

## 4.2. The economic and Financial Equation of a Metropolitan Transport System

**A sound and sustainable financial basis enables the MTE to implement a long-term strategy. Resources to finance public transport should come from varied sources, including, of course, and foremost, direct farebox revenues for daily operations and public budgets for long term capital investments.** Direct farebox revenue and a variety of public funding sources strengthens the autonomy and professionalism of the MTE, which must perform as to maintain the support of customers and stakeholders. If, on the contrary, the MTE depends largely on funding from a single source, it will lose autonomy.

Direct revenue from public transport services is conditioned by fare policy and patronage. Fare levels and policies are decided by the regulator, or by the responsible authorities who should be prepared to finance lower-than-market-price fares through payments to the MTE, the operators, or the travellers, depending on the general structure of the fare system.

Pricing and ticketing are a typical Shift-strategy tool to influence individual transport choices and, ultimately, location choices and mobility patterns at a regional scale. Different approaches to fare policy exist:

- Public transport services that are designed as backstops for low-income populations will have generally low fares and operating costs will be covered mainly by direct or indirect government contributions,
- Public transport services that are designed as backbones of the general transport system will have higher fares that are designed to optimise revenue for a sustainable operation.

There should be clear rules regarding necessary adaptations of fares levels, which could be either driven by market forces (such as Consumer Price Index or Wage Index) or by funding requirements (to achieve a defined minimum cost-coverage of transport operations).

**It is fundamental to understand that the economics of public transport and transport services pricing are part of a fully inter-modal metropolitan transport and land-use economy.** If the costs of housing in central locations are low and the costs of individual modes of transport are low, the market will only accept low public transport fares. In this case, MTE must rely on public funds from non-transport related sources. Given that these funds are also needed for many other public policies, MTE will either be under-funded or be seen as the new administration that spends other sectors' money.

If costs for housing in central locations are high and the cost of individual modes of transport is high, too, then a market-based transport economy can develop. Due to industrialisation at a global scale, the gross direct cost of individual transport – vehicles and fuel – are low. But the net indirect costs for government and society are considerable: provision of sufficient road infrastructure, for driving and parking, servicing of road transport (policing and traffic management), health costs linked to accidents and air pollution, eco-system costs linked to fuel and vehicle industries, etc. This is generally understood and, therefore, taxes on vehicles, fuels, parking, and highways are widely used and accepted.

In growing metropolitan regions, costs generated by private means of transport explode due to longer daily commutes, the shift from two-wheelers to motorcars and the subsequent congestion, negative societal externalities (e.g. road accidents, air pollution, noise, health impact, lack of green space), and the need for drastically increased infrastructure to keep the system moving. Several large metropolises in ASEAN have recently lived through this physical and financial challenge for the metropolitan transport system and found that **massive investment in public transport infrastructure is required to help reduce the long-term overall cost of the metropolitan transport system** (See below List of Mass transit systems in ASEAN metropolitan regions). Low transport fares will encourage more residents to seek housing at greater distances. This increases the problem and fails to gather the resources required to solve it.

Indirect and external benefits produced by increased public transport ridership also justifies contributions from beneficiaries of these benefits, such as car drivers who benefit from reduced congestion, and real estate investors who benefit from improved accessibility of their developments. Government contributions represent the sum of these indirect and external benefits that cannot be directly billed to the beneficiaries but can nevertheless be linked to transport-related indicators, such as land development rights, road toll, fuel surcharges, etc.

Earmarked taxes, levies, or special charges may be used to make the metropolitan transport economy and finance more transparent and predictable. For instance, **capital expenditure on public transport designed to connect new urban developments can be co-funded through a smart economic mechanism called Land Value Capture** (Suzuki, 2015). It is well known that a good public transport infrastructure greatly improves accessibility of a particular location and, therefore, increases its attractiveness for agglomeration of residential, commercial or business land uses, which results in higher land value. This appreciation in commercial value thanks to the provision of transport infrastructure should be captured and contribute to funding this transport infrastructure.

“Development-based land value capture (DBLVC) financing schemes being practiced in Asian megacities like Hong Kong SAR, China, and Tokyo have helped them not only to generate funds for transit investment and operational and maintenance costs but also to promote sustainable urban development through transit-oriented development (TOD). Many rapidly growing cities in developing countries have the conditions for introducing DBLVC – namely, strong economic growth, rising real incomes and increased motorization and congestion levels – all of which cause land value appreciation within proximity of transit stations or corridors. If adapted well to local contexts, DBLVC schemes have great potential to become an important strategic apparatus of urban finance and planning for cities in developing countries.”

*Source: World Bank (Suzuki, 2015)*

Transport infrastructure and capital investment in public transport can also be funded via mechanisms of public-private partnerships. In these mechanisms, transport projects are structured to be commercially attractive for private investors while some of the long-term immovable assets can be funded by public agencies. With a proper risk balancing and rewarding mechanism, the private sector can contribute significant additional operating and financial capacities. Such PPP contracts can be awarded on a concession basis or a franchise basis, depending on the financial viability.

### 4.3. A Sound Approach to the Economics of the MTE

**The MTE mission is to optimise the transport system and to produce much more transport-induced benefit for the entire economy and society, for a little more public spending.** MTE must be expected to implement good strategies and management. For MTE to organise public transport at the agreed service level, the responsible authorities must provide agreed financial support. This is the contract between the executive management of the MTE and the political board of its shareholders.

**The MTE is accountable for the efficient tactical allocation of resources toward the explicit and agreed strategic goals of the responsible authorities.** Additional funding provisions must also be made for contingencies and emergencies, such as for pandemic response or a natural calamity. There are also some cost-related externalities which are beyond the control of the transport executive, such as large fluctuations in oil prices. Sometimes the MTE also takes the role of hedging these risks through various mechanisms, such as, for instance, an oil price stabilisation fund.

An MTE that is able to design and implement such resource-saving transport infrastructure and organise a thriving intermodal transport system will have general support for its mission, including the necessary funding from the farebox, from government, from banks, and from private investors.

The MTE may play various roles regarding transport infrastructure, vehicle fleets, and rolling stock. These key assets require significant capital investment and a long asset lifecycle. Among various options, the MTE or the operator can become the owner of public transport infrastructure (e.g.

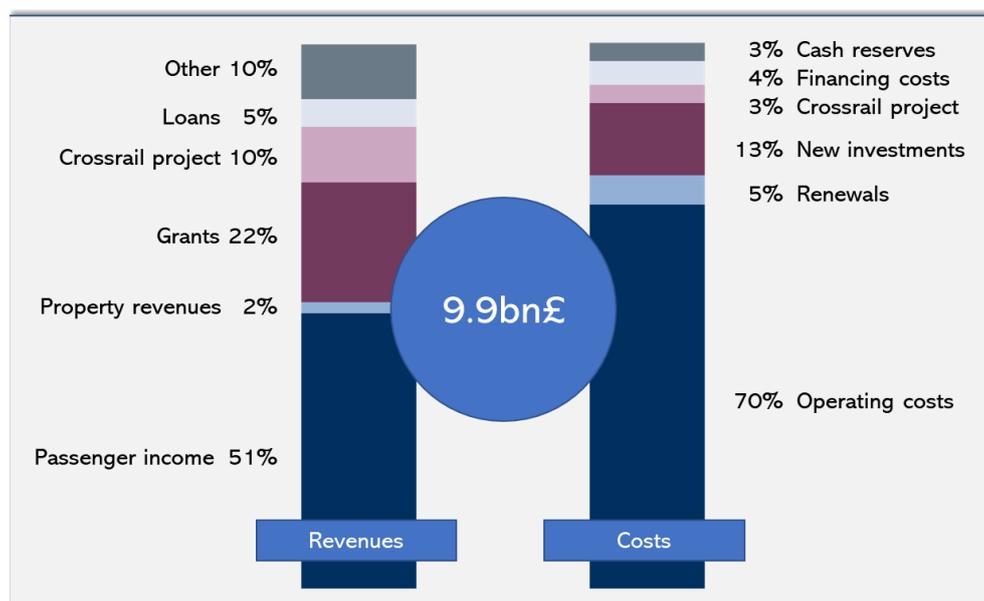
stations, depots, etc.) and/or rolling stock. Moreover, the role of the transport executive when it comes to capital investment, building new infrastructure, and buying new rolling stock can also be endorsed in various ways.

When setting up an MTE, decisions must be taken to allow sufficient financial autonomy for the executive and, as such, enable the MTE to address mobility issues with their financial resources. The following points should be considered:

- How and at what institutional level (local, regional, and/or national) are public transport investments and operation deficits financed? Who and what public institution will decide and vote on the MTE's budget?
- What are the financial resources available to the executive (from fare and/or shop revenues, etc.) and how will they be collected? Should the transport executive or another public body be allowed to collect a specific tax (for example, on companies located in the catchment area of the authority or on sales in a specific area)?
- Who decides and how on the principle and level of compensation? Who will own revenue/resources? How will this be used? How should the transport executive collect and distribute fare revenues to the operators based on the level of services provided by each operator in the geographical area? How will the fare structure and fare levels be decided and by whom? What incentives should there be for operators to increase revenue and what autonomy do they have?

It is important to design a good system of check-and-balances which not only minimises financial risks for the MTE to perform its obligations and duties but also ensures probity, integrity, and efficient deployment of financial resources. The projected Transport for London (TfL) budget for 2019/20 provides a snapshot of budget of a large, mature MTE, including revenues from congestion charge (among Other), high cost-coverage from passenger income and considerable asset renewals and new investments, mainly in the rail sector, the bus sector being entirely outsourced and its investment costs included in Operating costs.

**Figure 21: TfL Projected Budget 2019/20**



Source: adapted from TfL Business Plan 2021/21 to 2024/25 (Transport for London, 2019)

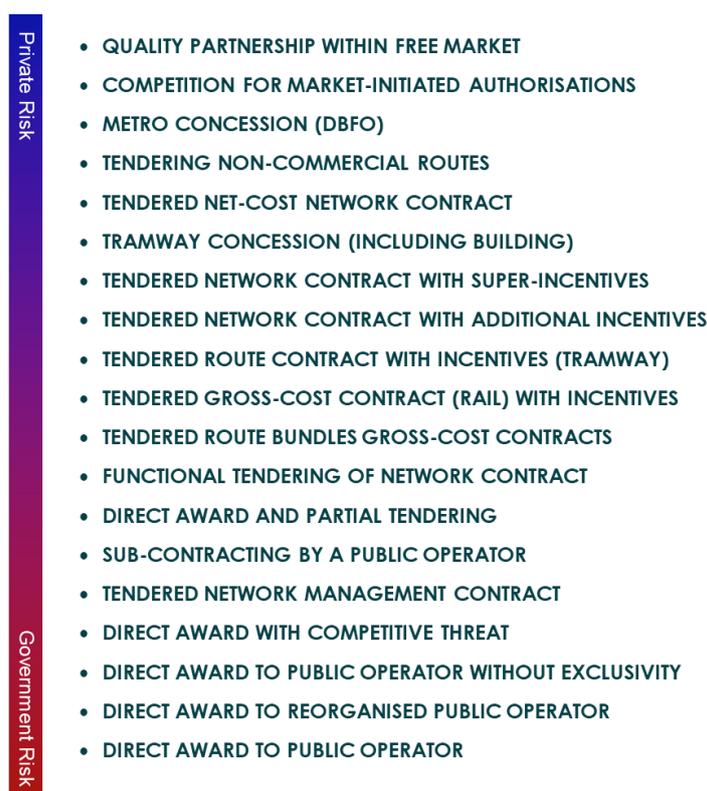


# 5) Market Organisation and Contracting

## 5.1. Contracts between MTE and Operators

A key aspect of setting-up and cultivating a transport services ecosystem is to define which types of operators would be allowed to operate what kind of services in which parts of the metropolitan region. Fundamentally, in a liberal market economy, these are framework conditions that are set by the regulator who attributes operating licenses-based on generally applicable regulations. But the **necessary, compulsory and exclusive facilities provided to the operators by the MTE establish the executive as the second level and decisive organiser of the transport services market**, to the point that the transport executive is sometimes referred to as the Regulator by transport operators.

Figure 22: Forms of MTE – Operator Contracts



Source: based on UITP survey

In practice, there is a **large array of possible contractual relations between the MTE and transport operators**, ranging from simple operating licenses, through various types of elaborate concessions and PPP to service-contracts and simple outsourcing arrangements. The design of an MTE – Operator contract depends on a variety of factors, such as the history and maturity of the MTE, the capacities of operators in the local market, the transport modes involved, the investments planned during the contract period, risk-sharing agreements, and the mode of contract attribution.

Contracts are mutual engagements between two parties. They do involve deliverables, but not necessarily payments. They also contain termination clauses. A license to operate transport services is already a form of contract. The operator delivers transport services according to the terms of the license, while the licensing authority delivers facilities required for the production of the service, such as infrastructure and protection from biased competition. **If the authority does not deliver, the operator will not perform according to the terms of reference or close his business.** If the operator does not deliver, the authority will issue penalties, or revoke the license. Licensing is a powerful tool for shaping and developing a transport system, if:

- Regulator and an MTE cooperate closely and have the prerogative to use the force of the State, when necessary.
- Regulator and an MTE have a profound understanding of the transport services business cases and market mechanics.

Any increase of the level of service that entails higher production costs must be paid for either by the travellers or by the operator. If authorities expect the level of service to increase higher than what travellers or operators are prepared to pay for, they must provide for this increase or see travellers and operators quit. **It is the MTE's task to advise the authorities on the optimal levels of service – and corresponding fare levels - that would be welcomed by the transport market, and which improvement of facilities provided by the authorities could further enhance growth and efficiency of the transport services market toward the objectives of the authorities' transport strategy.** An MTE with strong capacities in the fields of market knowledge, licensing, and facilitation of transport service operation can develop a multi-modal metropolitan transport system to high standards and performance without increasing operating subsidies.

But many authorities do not go this path. As a result, if authorities:

- are reluctant to provide the necessary facilities, such as dedicated lanes for public transport on a congested road and multimodal interchanges in central locations,
- want to see regular bus lines or high frequencies in areas where there are not enough travellers,
- want to see levels of comfort or safety that travellers are not prepared to pay for,
- then they must pay for the ensuing operating deficit and detailed terms of reference and financial schedules become the key element of the contracts between MTE and operators.

### **Some objectives and circumstances justify authorities spending not only on transport market facilities but also on operating costs:**

- In anticipation of desired market developments, subsidise operation on a new line until patronage is sufficient for self-funding.
- To achieve societal goals that no other actor is prepared to pay for from his own pocket, such as stricter exhaust standards for public transport vehicles than for private vehicles.

Contracts can be considered as performance management quality improvement tools to manage the public transport network and organise the division of responsibilities between the partners regarding the respective objectives. The contracts establish relationships between the MTE and operators considering the comprehensive mobility policy, the needs of customers, and facilities required to increase the quality of services and productivity level.

The type of contract depends on the allocation of risks and responsibilities between the contracting parties. It illustrates the willingness of the transport authority to bear industrial and/or commercial risks or to leave this risk to the operators. This choice is substantially linked to the local political and financial background. These are the three (3) type of contract between MTE and public transport operators:

- **A management contract** sees all costs and revenue risks on the authority side. In this case, the operator's management personnel need to be incentivised for efficiency by other means than competitive pressure. Such contracts are often concluded with agencies, and between the responsible authorities and the MTE itself.
- **A gross cost contract** gives the cost risk to the operators and the revenue risk to the MTE. Consequently, it is the transport executive that needs to ensure that the public transport network and service levels are optimised, while the operator is responsible for operational and maintenance costs.
- **A net cost contract** leaves all cost risks and revenues risk to the operator. While this is the cheapest option for the MTE, there is a clear risk that the goals of the transport executive (providing an attractive public transport for the metropolitan region) and the operator (maximising profit) will diverge over time.

### **The following questions need also to be addressed when considering the type of contract between the MTE and public transport operators:**

- Shall **sliding scale** clauses be introduced, whereby the MTE partly bears the risk of a rise in the input prices of the operator (e.g. for energy or personnel costs)?
- What **quality management** approach focussing on which indicators? Linking what proportion of the contract to bonus/malus? Applicable to operator's performance only, or also to MTE performance in its own tasks that also have a direct influence on operator performance?
- Should the MTE apply the same contractual obligations to every operator, or should it negotiate contracts case by case?

## 5.2. Asset Ownership and Management

Beyond the gross cost and net cost approaches to handling of operating revenue and cost, long term investments also require special attention and fundamental choices that determine the type of contract to be elaborated between the MTE and transport operators. Fundamental options are:

- Option 1 “Asset-heavy” transport modes and services: MTE to keep all necessary assets in public ownership and contract an operator to use these assets to provide public transport services,
- Option 2 “Asset-light” transport modes and services MTE: to contract an operator using his own assets, such as vehicles, to provide transport services.

**Figure 23: Asset Ownership in Function of Investment and License/contract Cycles**

Investment cycle Contract duration	Fast	Long
	Short	<b>Asset light</b> Operator ownership
Long	<b>Asset heavy</b> MTE – Operator Management	<b>Asset very heavy</b> PPP

An **asset-heavy MTE** is suitable for metropolitan regions that are at their early stages of maturity, where the performance of the market is not proven, or where the MTE wishes to retain maximum flexibility in contracting and minimise barriers to entry. They are also used in places where portability and transferability of assets are difficult, if not impossible. In ASEAN, Singapore adopts this mechanism.

An **asset-light MTE** is possible in mature and highly contested markets. The performance patterns of public transport are largely proven, and transfer of ownership of assets from one operator to another is easy. Asset light models are also possible in contracts where the asset lifecycle coincides with the contract duration requiring no transferability.

Asset investment cycles are obviously different for each mode of transport and it is common to make different arrangements for different modes of transport, with **rail generally being asset heavy and buses asset light. But the distinction between the two categories is not so obvious**, as large bus projects may be asset-heavy, while light rail operating contracts in small or mature systems may be asset-light.

In the case of major development projects involving large investment, such as rail or metro projects as well as BRT systems, the contract volume could be considered as “very heavy” and requiring the common effort of the public MTE and a private sector investor-operator, leading to Design-Build-Operate-Transfer (DBOT) contracts or other forms of Public-Private-Partnership (PPP).

## 5.3. Contract Lifecycles

### *Award of contracts*

Operator contracts can be awarded through a competitive tender process or by direct award. The administration of competitive tenders is a typical task of MTE, and an MTE may be established mainly for this task. But there can be many good reasons for MTE to award operating contracts directly.

For a newly established MTE, the dynamics and performance of the transport system it is set-up to manage, are largely unknown and fraught with many risks. There is also a dearth of locally experienced independent operators ready to compete in a tender process. Therefore, for its first contract cycles MTE may prefer to directly award and negotiate several short duration contracts with several operators, in order to:

- Collect data and develop detailed knowledge of the transport system
- Familiarise with contract management tools and processes, such as performance monitoring and quality control,
- Avoid costs and risks linked to the tender process,
- Establish several independent transport operators who will be able, at a later stage, to participate in competitive tenders.

**As the transport system matures and the MTE and operators become more experienced, all parameters of operating contracts become more predictable with greater precision, and competitive award processes can be implemented with less risk and better results.**

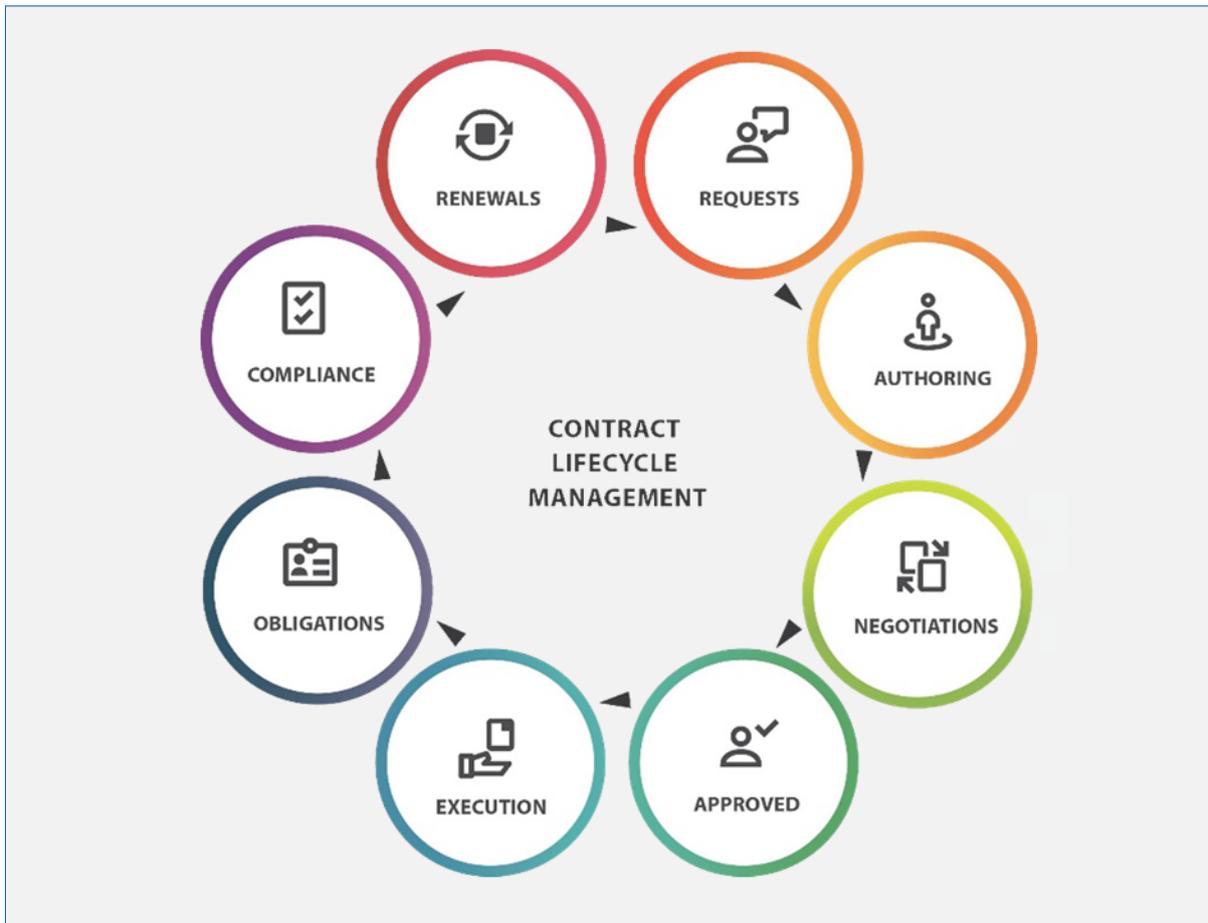
### *Lot sizes and numbers*

Contracts can cover entire networks, areas or portions of networks, or single routes, which are usually bundled in compact lots – for instance, all routes served from a given depot or routes on a given corridor, or type of service. For any given transport system and portfolio of operating contracts, larger lots result in fewer contracts and many contracts result in smaller lots.

- Smaller lots may be a good opportunity for smaller operators to maintain and possibly grow their business,
- Larger lots are necessary to attract international operators and know-how.

It is necessary to strike a balance when deciding on lot sizes and numbers. Too many lots may entail high transaction costs for the tendering process and the entire contract life cycle. Too few lots increase the costs and risks associated with losing a contract or changing to a new operator, which may lead to operators being considered to be “too big to fail” and end up in “regulatory capture” or “vendor lock-in”.

Figure 24: Contract Lifecycle Management from first draft to execution and compliance



Source: Fourbusinesssolutions, Wikimediacommons

Like for asset ownership, optimal lot sizes are different for different modes of transport:

**For bus networks, it is common to divide the network in many lots of relatively short contracts and to encourage each operator to hold a portfolio of several lots.** For instance: 24 lots of six (6)-year contracts held by three (3) operators. As a result, each operator may hold a portfolio of eight (8) contracts, and, each year, four (4) lots of the network can be scheduled for renewal and re-tendering.

- For the MTE, this entails recurrent activity in each step of the contract lifecycle. This optimises the MTE internal resource management and capacity building process. It simultaneously provides stability and the opportunity to redefine quality standards and contract arrangements for a significant portion of the network each year.
- For the operators, this system also provides stability and opportunity at the same time. Each year, they may risk losing one or several contracts of their portfolio, but not the entirety of an average portfolio in a single year. It also means that each year, they can increase their portfolio.

This permanent contract cycle requires a minimal network size. Smaller cities may not have networks large enough to sustain this strategy and, therefore, opt for the Regulator or Agency model. **MTE likely does manage networks of the required size and, therefore, should consider using the permanent contracting approach.** The same approach can be applied to other networks and fleets that can be subdivided into many similar lots, such as taxis or shared vehicles.

For rail networks, it is difficult to subdivide the network into many lots, even at a national scale, and the permanent contract cycle approach is not applicable and entire networks must be contracted to a single operator. **The MTE shall develop other strategies to avoid vendor lock-in by developing its own practical capacity in rail network management, such as:**

- Direct control over asset management,
- In-house management of parts of the system, such as infrastructure or dispatching,
- Active engagement in co-management in the framework of a PPP.

Special consideration should be given to existing transport service operators in the public, private or informal sector. Even though they do not have the capacity to develop the metropolitan transport network and must hand over a portion of their tasks, prerogatives, and resources to the MTE, they remain the depositary of many institutional and personal capacities that should be maintained within the new governance structure. This is a tricky exercise. The managers of the old system often perceive new governance structures with more than healthy suspicion and may resort to political backing or industrial actions to defend old habits. For the successful implementation of an MTE, it is critical to build trust, maintain livelihoods, and provide opportunities for the actors and stakeholders in the existing local transport services sector.



# 6) Setting Up an MTE

## 6.1. Legal Basis

A modestly formalised coordination between responsible authorities may not require any new legislation and can be a useful precursor for a transport executive. MTE should have a national legal basis that establishes similar rules and procedures for all MTE in the country and facilitates the engagement of national-level actors in each metropolitan level MTE, the cooperation of MTE of different metropolitan regions with each other, as well as the interaction with operators and third-party public and private actors.

**Within the framework of the national law**, like for any other public enterprise, a specific national or sub-national law will be required to incorporate an MTE and establish the rules by which it is governed and interacts with the other actors in the transport system. This includes definition of decision-making mechanisms, such as the distribution of voting rights among the shareholding partners, the scope of executive decisions that the MTE can take independently, and the **qualitative or quantitative threshold for referring to strategic level authorities**.

It is important to ensure that the organisation's tasks are matched by the right organisation and capacities. As the MTE will be created amidst existing organisations, it will be built, at least in part, with resources and personnel transferred or recruited from these existing organisations. The interfaces and processes between the MTE and other organisations and stakeholders are of similar importance. Planning and managing this organic change are critical and must be conducted with a blend of delicacy and authority specific to each situation. A solid legal basis will be very helpful in this regard.

Figure 25: Legal Foundation and Regulatory Framework for the MTE

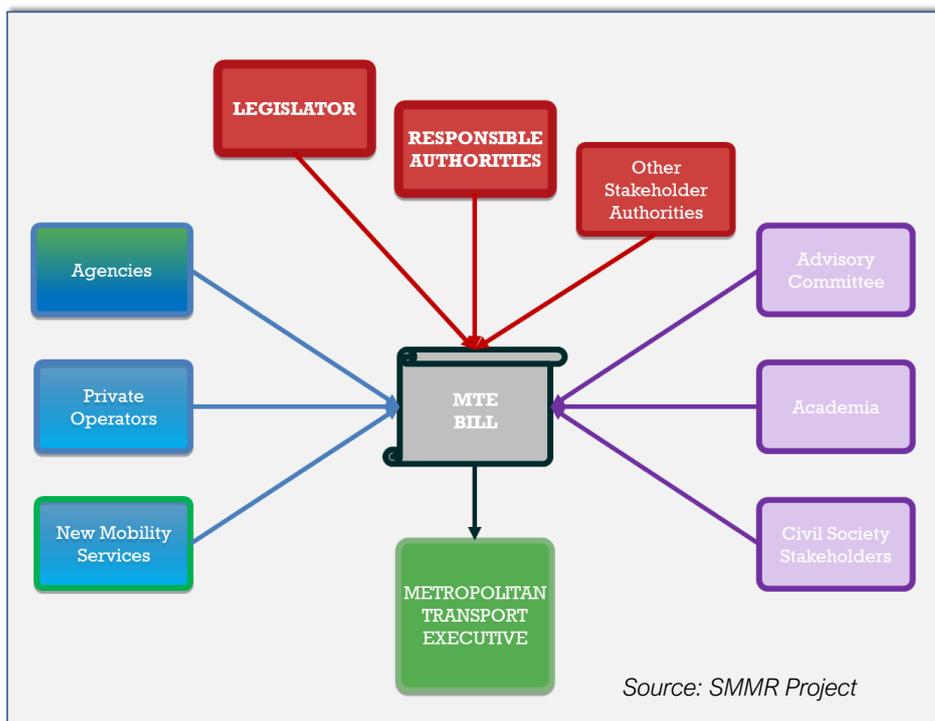


Figure 26: Mexico City Comprehensive Mobility Law



In 2014, the Legislative Assembly of the Federal District – the state of Mexico City – promulgated a law establishing a Mobility Management Center that oversees all public transport operations and includes operational integration between transport departments, integrated management of resources, and more effective road planning.

The law of more than 250 articles establishes the principles, institutions and procedures of all aspects of sustainable transport planning and integration, as lined out in its chapter headings: Headings: Mobility Planning – Mobility Impact Study - Transport Classification - Infrastructure For Mobility And Its Use - Driving Licences and Licences - Transport Permits - Integrated Public Transport System - Concessions - Transport Regulatory Body - Public Passenger Transport Fares - Culture Of Mobility

“The new law establishes the groundwork for the creation of a regulatory body for mass transit corridors and transportation operators, bringing more cohesion to overall transport systems in the city. This regulatory body, to be up and running by January 2015, will also be charged with protecting citizens’ rights to high-quality public transport and helping public transport service to become more efficient, safe, and inclusive. It will also establish and enforces standards for the quality, safety, and timeliness of transport services.

To meet this ambitious promise, Mexico City’s leaders are taking a holistic approach to changing the city’s mobility systems, incorporating principles of urban resilience, inclusive governance, and active transport. As part of guaranteeing all citizens the right to mobility, the law highlights the need to protect the most vulnerable road users. This approach means a significant but worthwhile change in transport planning, as previous policies focused primarily on car users”.

*Source: adapted from (World Resource Institute (WRI), 2014)*

Figure 27: Singapore Land Transport Master Plan 2040

## 20-Minute Towns and a 45-Minute City

The Land Transport Master Plan (LTMP) 2040 envisions a land transport system that is convenient, well-connected and fast using Walk, Cycle, or Ride transport options.





Learn more about how we're connecting homes, communities and workplaces at [www.lta.gov.sg/ltmp2040](http://www.lta.gov.sg/ltmp2040)

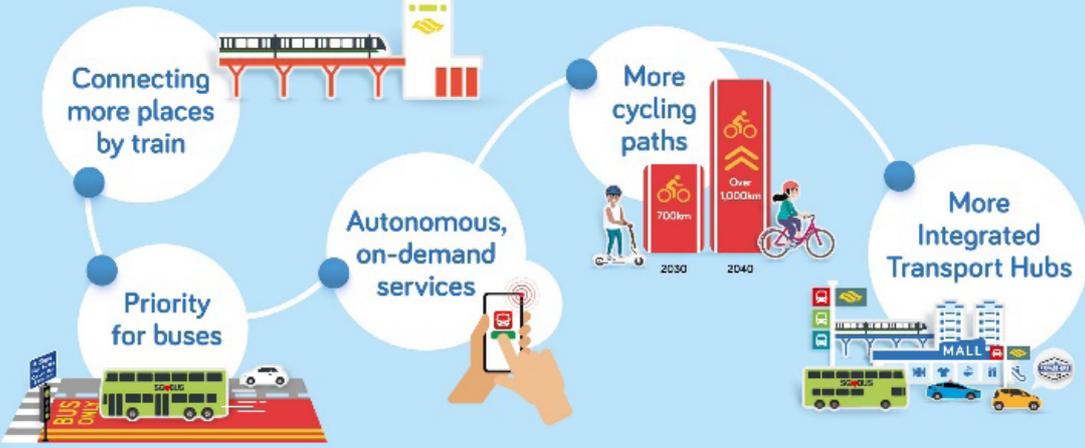
**By walking, cycling or riding, you can:**

Take no more than 20 minutes to get from home to the nearest neighbourhood centre.



Take 45 minutes or less in most cases to reach your workplace during peak periods.





Source: (LTA, 2019)

## 6.2. Masterplans

Long term masterplans are necessary instrument in the planning, implementation, and management of large, capital intensive, complex systems such as a metropolitan transport system. But the mere existence of a blueprint document is insufficient in the real world.

“... various public transit master plans which include the construction plans of urban railways, those of BRT, and expansion plans for buses [have been proposed]. But the key issue is that those flashy master plans have not been implemented in practice. This study aims to propose implementation strategies for improving public transit in ASEAN megacities. It is not going to reiterate proposing another master plan that shows how many subway lines will be constructed and where BRT corridors should be constructed. Instead, it attempts to suggest transport financing mechanisms, transport organizations, legal systems, and capacity-building issues to ASEAN countries for implementing public transit plans.”

*Source: KOTI (Changhwan MO, 2014)*

Complete masterplans are not infrastructure blueprints, but tactical level policy documents that:

- Expose a general vision, values, and policy.
- Cover all modes of transport and large enough zones.
- Launch long-, medium and short-term improvement projects.
- Are based on data and information as complete and accurate as necessary.
- Establish a monitoring process with goals and measurable indicators defined.
- Combine “hard” and “soft” measures geared towards those goals and objectives.
- Include tools and resources required to implement these measures, in particular financing and funding.
- Last, and most importantly: are fully endorsed and actively supported by all responsible authorities and other key stakeholders.

Long-term objectives and major projects must be pursued and planned over long periods of time. Hence, Masterplans must provide guidance for many years and even decades ahead. But contextual elements may change, strategic priorities evolve, and stakeholders’ attitudes can change rapidly: successful implementation of the masterplan raise expectations and ambitions; failure to implement may lead stakeholders to revise their visions and explore new pathways for their materialisation.

MTE's primary role is to manage the masterplan in its successive phases and iterative cycle:

Competent elaboration of the masterplan, in concertation with all key stakeholders

- Ratification of the masterplan by the responsible authorities
- Implementation of the plan by all actors involved
- Monitoring and evaluation of the implementation
- Initiation of the elaboration of the next masterplan

Masterplans are unlikely to succeed without a strong tactical-level organisation that can ensure a large enough coverage of modes, territories, actors and stakeholders. MTE are designed to achieve this. MTE cannot succeed without a masterplan, because actors and stakeholder recognition of the MTE's tactical leadership depends on its capacity to manage the full cycle of this fundamental tactical document.

Responsible authorities shall see to a close adequation between the scope and ambition of their masterplans and the set-up of the tactical institutions tasked to manage them. Ambitious integrated metropolitan regional masterplans require professional and inclusive MTE, and vice-versa. And, ideally, all three elements – the masterplan, the MTE and the inclusive process of preparing the next masterplan – grow together. Most MTE that are often cited as good practice examples (LTA Singapore, TfL London, MTC Seoul, Île de France Mobilités Paris, SL Stockholm cited in this toolbox, and others) have evolved to their current configuration over many growth cycles. Other MTE will need to go through their own growth history – but they can strive to learn form, catch-up, and maybe surpass the pioneers.

Large cities much smaller than these capitals also acknowledge the need to develop masterplans that anticipate further growth and mitigate issues arising from insufficiently prepared transport systems. In many of these large cities, existing governance structures seem to be well established and fit for the task of designing and implementing transport masterplans. Not entirely. Large cities are small or medium-sized metropolitan regions and their masterplans, although of smaller scale, are not less complex and require a strong professional tactical level leading organisation, i.e. an MTE, to succeed.

The creation or designation of an organisation especially tasked with the elaboration and implementation of a masterplan is not a guarantee for success. Plans and organisations can be erroneous and underperform. If the evaluation is negative, the initiation of the next cycle may need to involve a more or less fundamental adjustment of the MTE governance structure.

The Greater Jakarta Transportation Masterplan (RITJ) 2018-2029 is the first masterplan for "Jabodetabek" comprising the territories of 3 provinces and 9 municipalities. Its implementation – and subsequent updating will put to the test the Greater Jakarta Transportation Authority (BPTJ) created for this purpose in 2015.

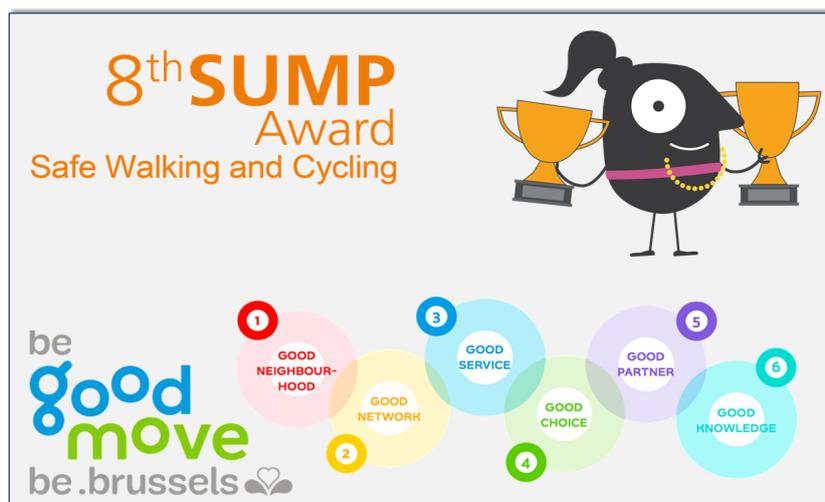
Figure 28: Chapters of the Greater Jakarta Masterplan (RITJ) 2018



Source: Improvement of Urban Transport System in Greater Jakarta (BPTJ, 2018)

The RITJ focusses on the fundamentals: horizontal integration of transport modes and several major transport infrastructure projects. These are expected to meet very ambitious mode shift and transport performance targets, an integrated approach of spatial- and transport planning and support systems in fields of traffic management and payment systems.

After several cycles, masterplans still include these elements, developing them further as to include more elements of service and environmental quality, urban design, and social cohesion, as shown in the LTA 2040 Plan, the Mexican Mobility Law or the latest edition of the Brussels Capital Region mobility plan good move that convincingly combines traditional infrastructure planning with approaches and concepts of Sustainable Urban Mobility Plans (SUMP).



More on SUMP: <https://www.eltis.org/mobility-plans/project-partners/sump-award>

More on good move: <https://mobilite-mobiliteit.brussels/en/good-move>

### 6.3. Advisory Boards and Committees

In the institutional labyrinth of metropolitan governance, Advisory Boards can add an additional diversion, complexity, and opportunity for sparring interest groups. On the contrary, if set-up and managed skilfully, they can help overcome obstacles, mitigate risks, and lead the way out of the labyrinth. The creation of a new MTE with many shareholders and stakeholders bears the risk of antagonism of interests. It may be wise to begin the process of creating an MTE with the formation of non-executive advisory bodies comprising thought leaders, academics, representatives of civic societies, representatives of special interest groups.

A high-level advisory body can be instrumental during the design and implementation of an MTE and, once the MTE is created, help maintain the ambition and vision that have led to the creation of the MTE. The creation of such an advisory body is also an opportunity to engage with the many important stakeholders who cannot be included in the executive structure of the MTE, but whose creative input or social support are critical for its success. Specialised advisory committees can help to tackle socially complex or delicate topics, such as, in no particular order, safety & security, mobility impaired, taxis, tourism, environmental impacts.

The status, scope and organisation of advisory panels depends on the local culture of civil society engagement. Mobility advisory boards and committees may be trendsetters for the development of a participatory planning culture in all fields of regional development. Reciprocally, mobility advisory boards will struggle to make an effective contribution to the regional policy debate if they are not embedded in a pre-existing culture of public consultation.

## Figure 29: Advisory Boards in Brussels-Capital Region

The Regional Development Commission (CRD) is responsible for giving reasoned opinions to the regional government concerning the preliminary draft ordinances, the draft decrees, the draft regional and municipal plans, and regulations. Its missions are determined in articles 7 and 8 of the Brussels Code of Regional Planning (CoBAT).

The Regional Commission is composed of 18 independent experts appointed by the Government, nine of whom are so presented by the Parliament of the Brussels-Capital Region. These experts represent the following disciplines: town and country planning (3), mobility (3), environment (3), economy (3), housing (2), cultural heritage (1), natural heritage (1) and architecture (2).

More information: <https://www.crd-goc.be/fr/la-commission>



The Regional Mobility Commission (CRM) is an important place which allows the meeting on a regular basis of the many actors of mobility in Brussels: the regional administration [i.e. bruxelles.mobilité, the Brussels MTE], the municipalities, the public and private operators of transport (including those connecting to neighbouring regions), users (all modes combined, from people with reduced mobility to coach operators), residents, unions, employers, etc. (78 members in total).

In addition to its advisory competence, the Regional Mobility Commission is also a space for information and exchange between stakeholders. While any member of the regional government can seek the advice of the CRM, the Commission is free to deal with any issue related to its raison d'être. In recent years, members have shown their interest in arriving at more consensual opinions reflecting a common vision of mobility, respectful of everyone's concerns. CRM formal opinions were a significant contribution to the regional mobility masterplan / SUMP good move.

In 2020 and 2021, the CRM has issued opinions on, for example:

- Regional spatial plan - draft government decree relating to business travel plans - opinion on the preliminary draft ordinance establishing a tax to combat automobile congestion
- municipal development plan for the municipality of Evère – Light rail to Airport project
- emergency measures in the context of the covid-19 crisis - draft decree amending the decree relating to the creation of a low emission zone
- post-covid-19 Brussels recovery plan
- opinion on the bicycle parking masterplan project.

<https://mobilite-mobiliteit.brussels/fr/good-move/good-partner>

## 6.4. The Special Case of Cross-border Transport Governance

In cross-border regions, agencies operating on either side of the border tend to cooperate in barter agreements, with each agency providing half of the cross-border services, overcoming challenges such as different legal systems, political systems, and technical specifications. Such arrangements are generally easy to implement, as no or little financial agreements are involved. These interpenetrating transport services create a seamless experience of cross-border connectivity with the possibility for users to use their own familiar public transport service to reach the neighbouring city across the border. But this model reaches its limits, when cross-border transport demand increases, and the costs associated with the barter agreements become a concern for the transport authority on either side of the border.

**Figure 30: Thai-Lao International Bus in Regional Public Transport**



Source: SMMR Project

When cross-border cooperation intensifies, responsible authorities on both sides will want more explicit accountability. Specific investments and more complex transport services will also require common management of the cross-border operations. In this case, the responsible authorities will engage step by step into a cross border cooperation, starting with a cross border service, proposing fare integration and considering setting up common cross-border transport governance using MTE tools.

In Europe, cross-border mobility has increased significantly as a result of European integration over the past decades. In order to provide better public facilities for the growing cross-border metropolitan regions, new governance tools were created.

For instance, the *Karlsruhe Agreement between France, Luxembourg, Germany, and Switzerland on cross-border cooperation between regional and local authorities and public bodies* (Accord de Karlsruhe - Karlsruher Übereinkommen, 1996) has laid a legal foundation for the cross-border cooperation between local governments of these states, for the common provision of public utilities, including public transport.

Agreement on cross-border cooperation between regional and local authorities and public bodies

between

the Government of the Federal Republic of Germany, the Government of the French Republic,

the Government of the Grand Duchy of Luxembourg and the Swiss Federal Council, ...

(Excerpts)

Aware of the mutual benefits that cooperation between local authorities and local public authorities on both sides of the border offers,

Desiring to promote the tried and tested good neighbourly policy between the contracting parties and to lay the foundations for deeper cross-border cooperation,

Aware of the different political and administrative orders of the States with regard to their local authorities,

Desiring to facilitate and promote cooperation between the local authorities of the contracting parties, have agreed as follows:

#### Purpose

The purpose of this Convention is to facilitate and promote cross-border cooperation between German, French, Luxembourg and Swiss local authorities and local public bodies within the scope of their powers and in compliance with domestic law and the obligations of the contracting parties under international law.

#### Cooperation agreements

Cooperation agreements are intended to enable the partners to coordinate their decisions, to provide services and to operate public facilities that are of common local interest. For this purpose, cooperation agreements may provide for the creation of cooperation institutions which, according to the respective domestic law of the contracting parties, can be institutions with or without their own legal personality.

#### Cross-border local special-purpose associations

Local authorities and local public bodies can create cross-border special-purpose institution that are supposed to take over tasks and services in which each of them has an interest. The cross-border special-purpose institution is subject to the domestic law of the contracting party in whose territory it is based which is applicable to public institutions for municipal cooperation.

Source: (Accord de Karlsruhe - Karlsruher Übereinkommen, 1996) Translation: SMMR project

In the area covered by the Karlsruhe Agreement, several cross-border light rail projects have been planned and implemented since the conclusion of the agreement:

2014: Extension from Basel (Switzerland) to Weil am Rhein (Germany)

2017: Extension from Strasbourg (France) to Kehl (Germany)

2017: Extension from Basel (Switzerland) to Saint Louis (France)

2019: Extension from Geneva (Switzerland) to Annemasse (France)

**Figure 31: Light Rail between Strasbourg (France) and Kehl (Germany)**



Source: Francebleu.fr

Cross-border special purpose institutions provide the legal basis for the common management of cross-border transport services by the transport authorities and executives in charge on either side of the border:

- Planning of routes and timetables of cross-border services
- Contracting of the service operator for cross-border services
- Setting of fares and sharing of revenues and/or costs of cross-border services

Cross-border special institutions are usually very slim organisations, given the strategic, but rather small scope. They may have legal personality, but have no or limited staff, the tasks of the cross-border special institution being carried out by the share-holding authorities, agencies or MTE of both sides.

In South-East Asia, most international borders are defined by natural obstacles such as seas and mountains and cross-border metropolitan regions are less common than in Europe. However, the special case and experience of cross-border transport governance is also relevant for ASEAN Member States, since with the development of transnational corridors, the demand for cross-border mobility will increase significantly and the growth of many border cities and cross-border regions can be expected in:

- Brunei Darussalam–Indonesia–Malaysia–Philippines East ASEAN Growth Area (BIMP-EAGA)
- Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT)
- Greater Mekong Subregion (GMS)

Metropolitan regions within ASEAN Member States keep growing at a fast pace. Eventually, metropolitan regions will begin to overlap and interconnect, as for instance, on Java, Indonesia. Well established MTE of neighbouring metropolises may set-up among them specialised cooperation agreements similar to those between international cross-border regions.

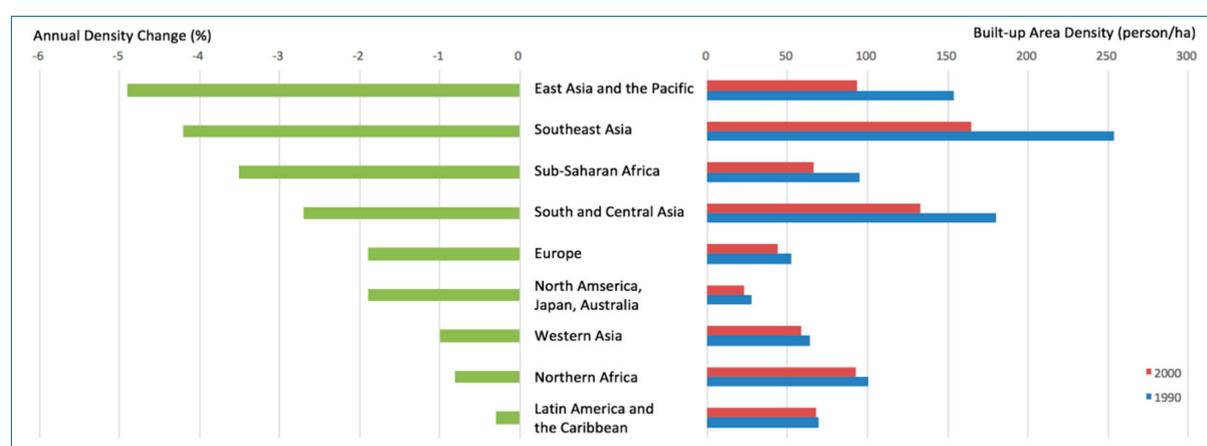
## 6.5. Characteristics of ASEAN Metropolitan Regions

In ASEAN Member States metropolitan transport governance structures that compare to the degree of integration and maturity of international good practice examples are very rare. This is largely due to historic objective characteristics of urbanisation and transport systems in the region. And the governance structures may change as these characteristics are changing.

### *High degree of individual motorisation*

Transport systems in ASEAN cities are characterised by a high degree of mixed-use urbanism with housing, work, education, basic supplies and facilities, recreation located nearby, which allows for the use of walking and cycling (a traditional form of the Avoid approach).

**Figure 32: SE Asia Urban Form in Regional Comparison**



Source: (Tzu-Ling Chen, 2020)

As cities grew, walking and cycling was quickly complemented or replaced by motorised two-wheelers. Motorised two-wheelers allow for fast and general individual motorisation and create difficult market conditions for local public transport. In many cities and metropolitan regions where motorised two-wheelers are very popular, they have created a specific type of hyper-individualistic transport system that sets a very specific baseline for any A-S-I strategy.

**Figure 33: Motorised Two-wheelers / Total Number of Road Vehicles (2019)**

Viet Nam	95%	Philippines	63%
Lao PDR	86%	Thailand	53%
Cambodia	83%	Malaysia	47%
Myanmar	83%	Singapore	14%
Indonesia	69%	Brunei Darussalam	0%

Source: ASEANStatsDataPortal <https://data.aseanstats.org>

But as cities and metropolitan regions grow larger and economic standards rise, the two-wheeler-based transport systems also reach their limits:

- The internal combustion engine of motorised two-wheelers are relatively intense sources of noise and air pollution, and in central areas, the number of two-wheelers are identified as environmental nuisance and overwhelm the available road and parking space capacity. Electric and shared two-wheelers are only a partial solution to these challenges.
- With urban growth and economic development, less dense, less mixed-use, more comfortable urban and sub-urban housing and economic districts are becoming more dominant. With distances and purchasing power increasing, individual motorisation increases, two-wheelers are replaced by motorcars, and the issues born with the motorised two-wheelers literally explode.

**Figure 34: Motorised Two-wheeler Individual Mobility (Viet Nam)**



*Source: SMMR Project*

### *Private initiative bus services*

The informal private sector is the default provider of public transport services around the World, including in ASEAN Member States. It is very effective in providing no-subsidy transport services for trips that cannot be made on foot or by individual transport. They easily adapt their operations and expand to providing essential transport services in new areas of growing metropolitan regions much quicker than any formally implemented public transport. Thus, informal transport helps easing real-estate pressure in central cities, delays the trend to private vehicle ownership and traffic congestion and contributes to maintaining socio-economic balance. But only up to a point.

**Figure 35: Informal Regional Transport (Cambodia)**



*Source: SMMR Project*

With urban growth and economic development, the cost-saving trade-offs of informal transport become unacceptable for a growing number of commuters, who will switch to private cars as soon as possible. To weaken this trend, it is necessary to gradually improve the environmental and safety standards and transport performance of these services. Such efforts are undertaken, for instance, in the Philippines with the PUJ Modernisation programme and projects to further develop mass transit systems in Metro Manila and other metropolitan regions.

Figure 36: Micro-Operator Mass Transit (Philippines)



Source: SMMR Project

Uncertain waiting times in Dakar, Senegal, partly because of the very nature of these 'go-once-full' services, contribute to unreliable travel experiences. Passengers' safety and comfort standards of vehicles are low. Over-supply can be observed on main roads in Turkish cities, for example, at the expense of areas and populations that are excluded. Even if travel fares are well known, cash-based payment schemes do not make revenue flow clear, neither payment easy nor safe for users in times of pandemic. In addition, the transport can also be characterised as a territorial system: Routes are managed locally, with operating staff who develop a sense of appropriation of the area that they serve. As a result, any intrusion by potential competitors could lead to antisocial or violent behaviours, as observed in Cape-Town, South Africa, further worsening operating conditions and service quality. From the point of view of authorities, informal transport plays a major role in cities, but is also associated with significant externalities to urban life. These include congestion on main corridors, both air and noise pollution due to old vehicles, and accidents. Informal transport develops in low transport governance environments. In such a context, transport functions or competencies are often not clearly defined or are scattered between various authorities. Mandates and responsibilities between different levels of governments are overlapping or conflicting. Specific infrastructures or facilities that would ease transportation (e.g. dedicated bus lanes, bus stop, interchange) are not available. Such a context does not favour cooperation, coordination, coherent service provision, and a transition towards an environmentally friendly fleet.

Source: (UITP, 2021)

The capacity of small and medium-sized transport operators to innovate and contribute to the overall public transport system should not be underestimated. The intercity bus sector in all ASEAN Member States is almost entirely composed of private operators and offers a vision of the performance, volume and quality a carefully regulated public transport services market can deliver. Integrated metropolitan regional transport systems shall draw on these capacities of the intercity bus sector as much as on the urban and regional informal sector.

**Figure 37: Privately Operated Intercity Bus (Malaysia)**



Source: <http://www.intercity.my>

**Mass transit**

Beginning in the 1980's, several ASEAN capital metropolitan regions have created mass transit systems to provide for space- and cost-effective access to high density urban centres. In Jakarta, namely, the national rail operator runs the KAI commuter rail services and the Bus Rapid Transit (BRT) system TransJakarta created in 2004 operated by the municipal PT Transportasi Jakarta is the longest BRT network in the world. Each cater for about 1 million trips daily; in a metropolitan region exceeding 30 million inhabitants. The municipal LRT and MRT lines opened in 2019 must yet develop and expand to make a quantitative impact.

The example of TransJakarta has inspired many (25) other cities in Indonesia to develop their own “BRT”. None of these bus networks match the international BRT Standard (ITDP, 2016), but they express the effort of transport authorities in medium-sized cities and metropolitan regions to develop formal public transport systems and form a starting point for the development of a nationwide locally designed and managed urban public transport strategy.

**Figure 38: World Class Mass Transit by Rail and BRT in Jakarta**



*Source: (Sustainable Bus, 2019)*

Over past decades, transport authorities of major cities have been struggling to develop individual, isolated, mass transit agencies in rather unfavourable environments, with limited financial and organisational resources. Therefore, the list of formally qualified Bus Rapid Transit (Bus), Light Rail Transit (LRT) and Metropolitan Rail Transit (MRT) mass transit systems in ASEAN remains short, and the contribution of these services to the metropolitan regional transport systems remarkable, but quantitatively limited (Singapore MRT excepted).

**Figure 39: Mass transit systems in ASEAN metropolitan regions**

Mass transit system Metropolitan railway or BRT	Inaugurated	Latest extension	Length (km)	Ridership (millions/ year)
Manila Light Rail Transit System	1984	2021	37	218
Singapore Mass Rapid Transit	1987	2021	216	1,235
Kuala Lumpur Rapid Rail	1996	2017	143	113
Manila Metro Rail Transit	1999	2000	17	97
Bangkok BTS Skytrain	1999	2021	69	237
Bangkok MRT	2004	2019	71	95
TransJakarta	2004	2017	251	264
Bangkok BRT (BTS)	2010		17	9
Klang Valley BRT Sunway Line	2015		5	6
Ha Noi BRT	2016		15	n.a.
Jakarta MRT	2019		16	10
Jakarta LRT	2019		6	n.a.
Manila EDSA Busway	2020		25	n.a.
Ha Noi metro	2021		13	n.a.
Ho Chi Minh City metro	2022		20	n.a.
Vientiane BRT				n.a.
Iskandar Malaysia BRT			51	n.a.

Source: Wikipedia (several entries)



# 7) Recommendations

## 7.1. Change Management: Setting Clear Consensual Goals

The restructuring of existing models of governance and/or the introduction of a transport executive may be challenging and subject to several significant political, institutional, and legal hurdles. **The most important step in any reform is consolidation of the political will of the decision-making establishment, without which the entire process risks being derailed or stalled.**

**It is helpful to start the formation of an MTE as early as possible, before responsibilities are scattered across existing departments, agencies, and private sector organisations, to a point where structural lack of coordination and even oppositions arise.** A head-start allows for the organic growth of an efficient MTE with well-defined competencies that are in line with the local historical and socio-economic background of the city, the surrounding metropolitan region, and the national level institutions.

**If “as early as possible” has already past, the MTE can be designed using many of the building blocks that are already in place.** This is more difficult to manage but can yield astonishing results in a very short time.

A thorough analysis of the current situation and baseline scenarios should be undertaken in order to make responsible authorities and other stakeholders aware of the great difficulties they will face if they do not engage in the necessary reforms. **This exercise should be initiated and conducted under the leadership of a legitimate champion and steering structure.** It could, for instance, be mandated by the Central Government and led by the Minister of Transport or a senior official, in close cooperation with local government leaders.

This analysis and baseline scenario will allow to elaborate common answers to the following preliminary questions:

- What are the structural, mobility-related **challenges** that need to be tackled?
- What are the economic and financial **constraints** and opportunities?
- What are the financial and budgetary **tools** available?
- How can all actors and **stakeholders** be brought on board?

Sometimes, conflicting views concerning general objectives and strategies and conflicts over priority projects and scarce financial resources may become a barrier to change. In such situations, **a pragmatic step-by-step approach can be adopted, as long as the achievable milestone does not divert from the general objective.** Even if the beginnings are modest, long-term goals and the plan to reach them should be made as clear and widely shared as possible. It is important to establish a consultation and dialogue with all relevant stakeholders that will allow for better assimilation and legitimisation of any proposals for a new governance structure, which will often mean substantial shifts in competences, decision-making and established business models.

## 7.2. Defining the Scope of the MTE

During the preparation phase preceding the set-up of the MTE, and during the stakeholder consultations, the following fundamental questions should receive adequate answers.

### *Geographical area*

What is the best geographical delineation of an MTE? In principle, it is the metropolitan area, which is defined as the area from where a significant proportion of residents who commute to the central city regularly. However, the MTE is not a geographic analysis, but an administrative tool for local governments. Hence, it is first and foremost a strategic decision of the responsible authorities at central, provincial, and possibly municipal level to join a territory to the scope of the MTE, or not.

For instance, if the MTE main or first task is to consolidate a new mass transit system, its territory may at first be based on the immediate catchment area of that transport network. In this case, neighbouring local governments may request to join the MTE because they too want to obtain a better connection to the transport network.

Setting up of an MTE is particularly relevant for suburban and rural areas and small urban centres that are being engulfed by the expanding metropolitan regions. These regions have many transport service providers with unclear lines of regulatory control and yet there is a high degree of interdependency with the better organised core city. The MTE will bring more structure and clarity in such situations.

### *Scope of responsibility*

What shall be the **extend and modalities of horizontal integration of the MTE**, at its creation, and in medium- and long-term perspective?

- Only local public transport in the center of the metropolitan region or all public transport services in the entire metropolitan region?
- Only formalised and subsidised public transport, or also informal services, shared modes, on-demand transit, e-hailing, taxi?
- Only management of transport services, or also all transport infrastructure, parking, road traffic, non-motorised transport?
- Only transport services and infrastructures, or also spatial planning and urbanism as in Transit-Oriented Development (TOD)?

It is not possible to include all functions of a widely integrated MTE at once. MTE should be set-up with a set of core functions and then be expanded and consolidated step-by-step. In the long run, it will not be possible, necessary, or desirable to integrate all remotely transport-related functions in one all-encompassing MTE. Instead, inspired by RASCI, RAPID or other decision-making models, more loose and flexible, yet formal and effective coordination mechanisms can be created between tactical level actors and integrated decision-making processes in different fields and functions.

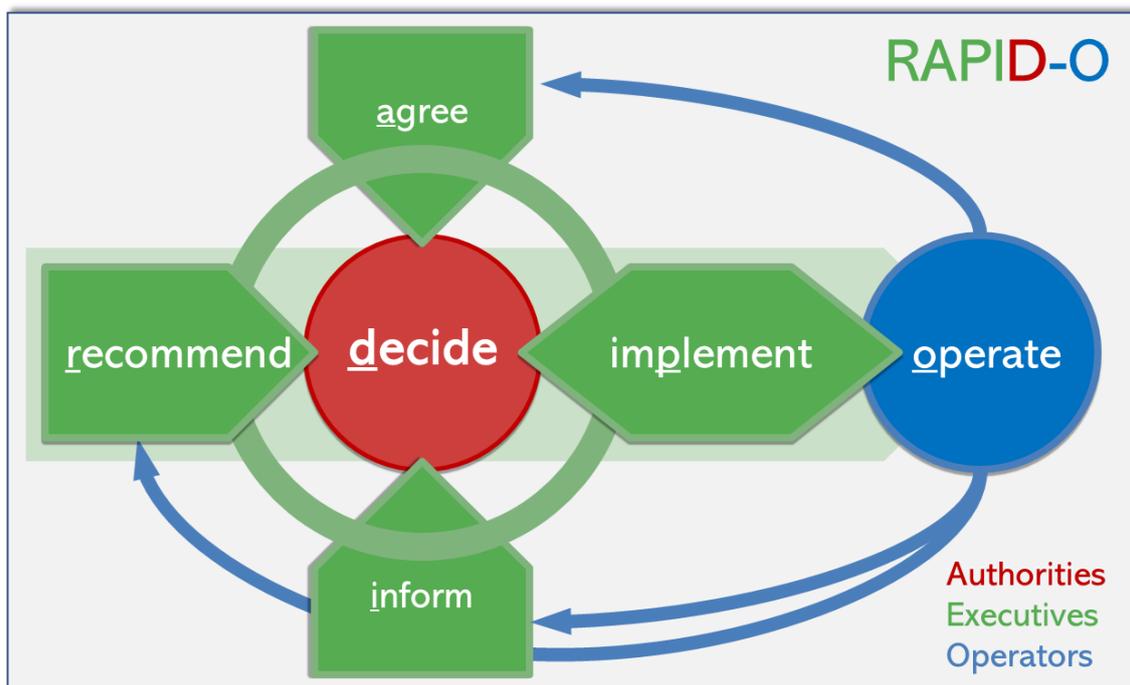
RAPID-O or similar concepts allow to elaborate the description and evaluation of existing governance structures and of proposals for new governance structures in greater detail and covering more fields of responsibility. This will be a helpful tool for discussions among policy makers in view of designing a common vision for an enhanced transport governance structure.

Core competencies given to the MTE, such as transport planning and regulation/contracting of operators should be given full and exclusive, as to create a clear and straight-forward chain of management roles in a linear decision making and implementation process:

- MTE **recommends** course of action to responsible authorities
- Responsible authorities **decide** and task MTE with their implementation
- MTE **implements**, namely by regulating or contracting **operators**

For other matters that are equally part of an integrated sustainable transport system, but that are of the competency of other local or national authorities and executives, the decision-making process is less linear, and the involvement of the MTE may be limited. For instance, transport planning, land-use planning and infrastructure planning processes are rarely fully integrated, but rather coordinated through formal requirements of **information** and **agreement** among executive agencies at key steps of the respective decision-making process.

Figure 40: RAPID-O Decision Making Model



Source: SMMR Project inspired by Bain <https://www.bain.com/insights/rapid-tool-to-clarify-decision-accountability/>

The Operators are not the simple recipients of orders given by the implementing Executive. If operators are independent companies that are contracted or regulated by the transport executive, they can agree, or not agree, to execute operations under the proposed conditions. Vertically integrated agencies may not have this choice, but the resulting costs must be borne by the authority owning the agency. In both cases, Operators are requested to inform the Transport Executive about the operations they are conducting and make recommendations regarding the improvement of operating conditions that Transport Executives and responsible authorities may choose to follow, or not.

The table below uses a simple key derived from RAPID-O to establish a quick scan of the roles-profile of the MTE presented in this report:

“+” = Contributor: has the right to inform the executive in charge of the matter considered

“++” = Co-responsible: agreement is required for the executive in charge to proceed

“+++” = Lead executive: has the prerogative to make recommendations to the responsible authority, taking into account the contributions and positions of other executives.

**Figure 41: Scope of Responsibility Matrix**

Metropolitan Region and Transport Executive Mentioned in Toolbox		Element of the integrated metropolitan regional transport system																									
Metropolitan Region (Strategic level / responsible authorities)	Transport Executive (factual level organisation)	Spatial planning	Metropolitan Transport Masterplan	Transport Data Warehouse	Mobility Education / Training	Road Infrastructure	Traffic management	Parking management	Road pricing (ERP)	Road vehicle permits and licences	Commuter Rail	Urban Rail	Intermodal interchanges	Bus Infrastructure	Public Transport Service Planning	School transport	Fare policy	Public Transport Control Center	Ticketing	Operator licencing	Operator contracting	Operation Urban Public Transport	Taxi and assimilated	Shared mobility	Cycling infrastructure	Walking / Streets	
Bangkok	MRTA	-	+	-	-	-	-	-	-	-	+	++	++	++	+++	-	+	+	++	-	-	++	-	-	-	+	
Brussels	BM	+	+++	++	+	++	++	++	+	-	+	+++	++	+++	+++	++	++	++	+++	+++	++	++	++	++	++	++	++
Dubai	RTA	-	+++	+++	+	+++	+++	+++	+++	++	+	+++	+++	+++	+++	+++	+++	+++	+++	++	++	+++	+++	++	++	++	+
Jakarta	BPTJ	+	+++	+	+	++	-	-	+	-	+	++	++	+++	++	+	++	-	+	-	-	+	+	+	+	+	+
Kochi	KMTA	-	+++	+++	+	-	-	-	-	-	++	+++	++	+	+++	+	++	+++	+++	+++	+++	++	+	++	++	++	++
London	TfL	-	+++	+++	++	+++	++	+++	+++	-	++	+++	++	+++	+++	+++	+++	+++	+++	+++	++	++	++	++	++	++	++
Manila	LTRFB	-	+	+	+	-	-	-	-	+++	++	++	++	++	+	+	++	-	+	+++	-	-	++	-	-	-	-
Newcastle	NEXUS	-	+	+	+	+	++	+	-	-	-	+++	++	+++	++	++	+	+	-	++	+++	-	+	+	+	+	+
Paris	IdFM	+	++	+++	+	-	-	-	-	-	++	++	++	+	+++	+	+++	+	+++	+	+++	-	-	-	-	-	-
Seoul	MTC	+	++	++	-	-	-	-	-	-	+++	+	++	+	++	-	+	+	+	-	-	-	-	-	-	-	-
Singapore	LTA	++	+++	++	+++	+++	+++	+++	+++	-	+++	+++	+++	+++	+++	+	++	+++	+++	+	+++	-	+++	++	+++	++	+
Stockholm	SL	+	++	++	-	-	-	-	+	-	+++	+++	+++	+	+++	++	+++	+++	+++	+	+++	-	-	-	-	-	-
Metropolitan Region XY																											
Geography	Actor	Element of the integrated metropolitan regional transport system (as above, to be adapted in detail to local situation)																									
Metro	«MTE»																										
Muni	Mayor																										
Province	Governor																										
State	Ministry																										
Central	Ministry																										

Source: Adapted, expanded from Worldbank (Kumar & Agarwal, 2013)

If authorities aspire to create an MTE producing similar results to those of a given good practice model, it should probably have a similar roles-profile. But the transport governance of any metropolitan region cannot be described and understood by establishing the roles-profile for the leading executive only. Even in governance structures with a strong, widely integrated MTE, like London TfL, Dubai RTA or Singapore LTA, other organisations contribute to or oversee important elements of the transport system. Therefore, any investigation into the necessities and possibilities of improving the transport governance in any given metropolitan region should commence with the elaboration of a tailor-made Scope of Responsibilities Matrix that includes all responsible authorities, tactical level organisations, individual elements of the metropolitan transport system and types of responsibility that best describe the existing situation.

### 7.3. Budgets

MTE gain their strength through the centralised and integrated administration of budgets of all authorities responsible for transport in the metropolitan region. In many medium-sized metropolitan regions in ASEAN, transport budgets are limited to road infrastructure projects. Responsible authorities that do have significant public transport projects in the pipeline have already allocated their budgets to exactly these projects. In large metropolitan regions, different authorities likely pursue different large projects independently. Integrating, or at least coordinating, these projects in a common MTE is already a big progress. But an integrated transport system cannot be built with large projects only. Budgets should be made available to develop a host of smaller projects and ordinary activities that integrate building blocks of different sizes into a dynamic, coherent system. To ensure financing from limited budgets will always be tight, and MTE must develop their capacity to mobilise more funds and use them more efficiently:

- Consolidate all transport infrastructure and transport services activities, with the clear objective to generate economies of scale and increase the multimodal transport system overall efficiency.
- Prefer investments in facilities that increase the attractiveness and efficiency of the transport system over prestige projects and operating subsidies that compensate for bad planning and lack of facilities.
- Develop capacity to work effectively with limited budgets, through excellent planning, stakeholder management.
- Increase direct revenues related to own activities: passenger revenue (direct or indirect), parking fees, road tax, congestion charge/ road pricing, land value capture, asset valuation.
- Use favourable financing models: most institutional funding agencies and public-private-partnership models require that an executive agency assumes the coordination of large projects.

A well-established MTE can largely contribute to risk management and provides confidence to funding agencies and private investors alike.

## 7.4. Cooperate Nationally and Internationally

Transport systems are deeply rooted in territories and societies. They can hardly be delocalised. It is wise to count on national public institutions and small and medium-sized enterprises who have intimate knowledge of the domestic circumstances and requirements. Therefore, national and sub-national governments and each MTE should see to building national capacities for the large array of roles in the transport sector.

Sourcing the know-how and investment capacity of international operating companies is an effective way to build capacities, especially for the introduction new, complex such as a BRT and metropolitan (light) rail, electric vehicles, cable-cars, and more. It requires a MTE to organise a transport services market that, at the same time, enables domestic enterprise to evolve and grow, and mobilises international operating companies capacities.

ASEAN, the neighbouring regions and other trading partner nationals are home of some of the World's renowned public transport systems. But most metropolitan regions do not fully benefit from the remarkable resources that are available beyond domestic borders. An ASEAN model or good practice for MTE contracting with local and international operators will help to develop the large ASEAN market for transport services operations, which will lead to more competition among suppliers and higher service standards for the consumers.

Many international networks of public authorities and transport executives also create opportunities for individual and institutional learning and capacity building. Participation in these networks should be encouraged on all levels.

## 7.5. Checklist and Continuous Improvement

This toolbox is proposed without a manual. For each city and metropolitan region, leaders of national, provincial, and local authorities responsible for parts of the urban and regional transport system should analyse the existing situation and the short- and long-term prospect of the transport system under their responsibility and evaluate whether the existing transport governance structure is adequate for efficient day-to-day management, as well as for continuous improvements, innovation, and up-scaling.

Many will conclude that strengthening of the tactical level organisation would be helpful for the development of a more ambitious and beneficial transport system in their city or region. The three-level governance analysis, the regulatory, agency and MTE governance models and the RAPID-O decision-making model can help in this task, as well as the checklist below. When policy makers responsible for mobility in any given metropolitan region can check all these boxes, the region is going to move toward more effective and efficient mobility, more dynamism and greater prosperity.

The original set-up of an MTE should not be considered as final. When responsibilities have been transferred to the new organisation and it has established its position and prerogatives, it must be evaluated how far the new set-up meets its objectives and what adjustments might be necessary to do so. If the MTE has met its objectives, the evaluation will help to formulate new, more ambitious objectives.

- A regular evaluation of the MTE size and capacity can help to evaluate whether the set-up of the executive is still in line with its mission.
- Processes and decision-making routines should be reviewed to ensure that the MTE can effectively contribute to achieving the relevant strategic objectives.
- Contracts concluded with operators should encourage the operators to contribute to the overall improvement of public transport.
- It is worthwhile to exchange experience with other metropolitan regions that have gone through similar processes and benefit from their expertise.

Figure 42: Checklist

### Vision: mobilise imagination

- Refer to national and international policy frameworks
- Elaborate long term vision for the regional transport system
- Federate key stakeholders for common action

### Goals: Define measures that materialise the Vision

- Avoid: integrate transport with land use planning
- Avoid: facilitate efficient mobility services
- Shift: provide mass transit at regional scale
- Shift: encourage active mobility
- Improve: reduce vehicle emissions
- Improve: increase road safety and comfort of sustainable modes
- Identify indicators, baselines, and targets for each measure.
- Identify quick wins and game changers in all categories.

### Milestones: plot the path to the achievement of Goals

- Outline scope of metropolitan regional masterplan capable of achieving the goals.
- Evaluate scope of responsibilities matrix covering all responsibilities required to implement the masterplan.
- Create legal basis, governance, and effective organisation of the Metropolitan Transport Executive (MTE) in charge of implementing the masterplan.
- Create governance structure encompassing all responsibilities required to implement the masterplan that could not be integrated into the metropolitan transport.
- Liaise with peers, nationally and internationalise, who are on similar paths to similar goals.
- Establish funding and financing mechanisms for the implementation of the masterplan.
- Contract operators, according to status: agencies, service providers, independent, informal.

Source: SMMR Project

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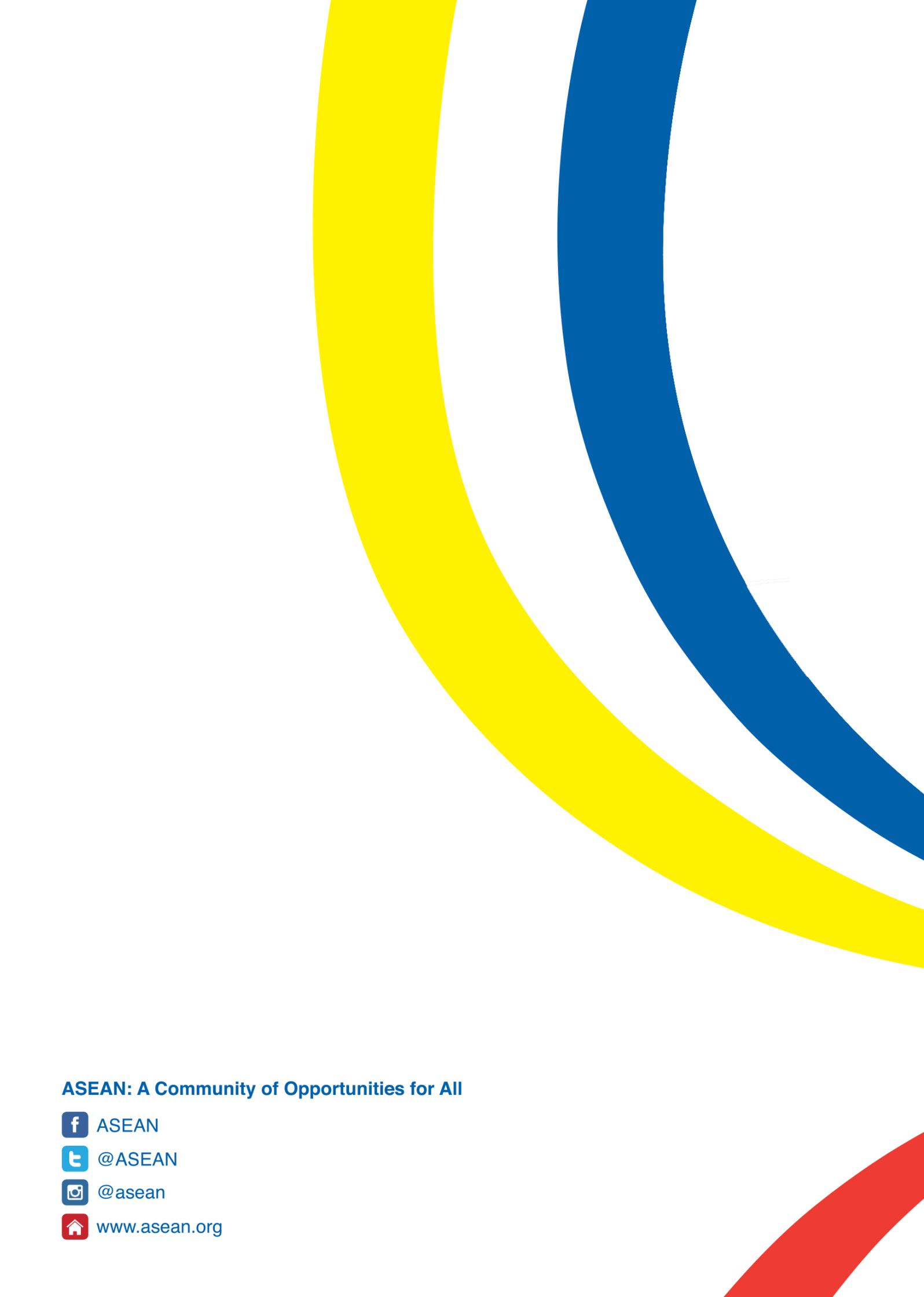
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