Evaluation of Urban Transport in OIC Megacities – Review of the Case Studies

Ankara, October 22nd 2015
1. Background to OIC megacities
2. The 3 Case Studies
3. Findings from the other OIC megacities (Dhaka, Istanbul, Karachi, Lagos, and Tehran)
4. General conclusions for OIC megacities
5. Recommended Policy Actions for OIC megacities
1. Background to OIC Megacities

Of the 7 OIC megacities:
- 1 (Lagos) in Africa Group
- 1 (Cairo) in Arab Group
- 5 (Dhaka, Karachi, Istanbul, Jakarta and Tehran) in Asia Group

- Cairo is the largest at 18.4 million
- Lagos is growing the fastest by 3.9% p/a and Karachi and Dhaka are also growing fast (by almost 3.5% p/a)
Overview of key trends:

◆ Differences in terms of economic and political development: ancient cities (Cairo) and colonial cities (Lagos, Karachi) have followed different paths of development

◆ Common problems of:
  o Rapid urbanisation after WWII
  o Lack of coordination between land use and transport planning
  o Growing middle class followed by motorisation
2. The 3 Case Studies

- Arab Group Case Study: Cairo
- African Group Case Study: Dakar in Senegal chosen instead of Lagos as an emerging megacity
- Asian Group Case Study: Jakarta
2.1 Case Study - Cairo

Overview

- Egypt is a pivotal country in the Middle East, the Arab World, Africa and the Islamic World.
- Political upheavals/instability.
- Greater Cairo Region (GCR) is the dominant metropolis of Egypt.
- The CGR the preeminent transport centre of Egypt accommodating over 20 million motorized person trips and 7 million non-motorized trips daily.

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Private Car</td>
<td>3,592,822</td>
<td>3,380,104</td>
<td>3,231,513</td>
<td>3,074,862</td>
<td>+17%</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>2,135,985</td>
<td>1,772,333</td>
<td>1,674,812</td>
<td>1,509,373</td>
<td>+42%</td>
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<tr>
<td>Lorry and Truck</td>
<td>1,083,938</td>
<td>1,033,849</td>
<td>1,020,378</td>
<td>978,731</td>
<td>+11%</td>
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<tr>
<td>Taxi</td>
<td>320,098</td>
<td>317,253</td>
<td>307,166</td>
<td>359,252</td>
<td>-11%</td>
</tr>
<tr>
<td>Other (e.g. Political/Governorate/Government etc. vehicles)</td>
<td>162,295</td>
<td>165,418</td>
<td>185,879</td>
<td>224,782</td>
<td>-28%</td>
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<tr>
<td>Tourist/Travel/school bus</td>
<td>72,255</td>
<td>67,849</td>
<td>56,139</td>
<td>54,924</td>
<td>+32%</td>
</tr>
<tr>
<td>Tuk Tuk</td>
<td>65,844</td>
<td>51,213</td>
<td>49,574</td>
<td>0</td>
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</tr>
<tr>
<td>Private Bus</td>
<td>38,227</td>
<td>36,672</td>
<td>31,556</td>
<td>36,270</td>
<td>+5%</td>
</tr>
<tr>
<td>Public Bus</td>
<td>16,494</td>
<td>16,420</td>
<td>19,417</td>
<td>19,104</td>
<td>-14%</td>
</tr>
</tbody>
</table>

Source: Data from Central Agency for Public Organization and Statistics, 2014
2.1 Case Study - Cairo

**Transport network and infrastructure**

- Severe traffic congestion
- No clear functional hierarchy of roads
- Lack of traffic signal control at intersections
- Lack of road signs and road markings
- Lack of facilities for pedestrians
- Inadequate junction designs
- Bus priority facilities

2.1 Case Study - Cairo

**Land use and urban form**

- Trips are relatively short
- Informal areas represent 39% of the Greater Cairo built up area and 17% of the Greater Cairo gross area.
- Historical Cairo occupies significant portions in the central core.
- The countries’ pivotal urban functions for economic and social activities are predominately accumulated in GCR.
- Non-uniform distribution of urban populations
- Informal settlements
- New Cities in the Greater Cairo Area

**Critical Urban Development Issues:**

- How to redevelop or serve the inner city areas with an extremely high population density=217 (person/ha)?
- How functionally can the growing new communities be integrated?
2.1 Case Study - Cairo

Mode availability and shares

Challenges for transport in Cairo

Modal shares in Cairo 2022
2.1 Case Study - Cairo

Freight and servicing

- No available data for the GCR
- Freight transport system in Egypt is dominated by road transport with a share of 96%
- Opportunities for more energy efficient rail and inland waterway transport are underutilized.
- Reliance on road freight causes congestion and accidents.
2.1 Case Study - Cairo

Road Safety

Trends in road traffic deaths in Egypt

Deaths by road user category in Egypt

Source: UN 2010 Road Safety Report with source from Central Agency for Public Mobilisation and Statistics CAPMAS

Source: WHO Road Safety in 10 countries fact sheet, page 1
2.1 Case Study - Cairo

Institutional and organisational structure

◆ GCTRA, responsible for
  o Transport Policy and Strategy.
  o Bus concessions.
  o Safety and quality.
  o Parking.
  o Taxis.
  o Micro bus

◆ GCTRA planned work activities include:
  o Enforcement - to work with Ministry of Interior.
  o Capacity Building within Ministries
  o Campaigns
2.1 Case Study - Cairo

Urban transport infrastructure financing


Key issues:
- No feasibility studies carried out on projects
- No defined bidding process/procurement route
- No calibre of staff within the Government to manage the projects
- No vision

Potential barriers:
- Bureaucracy
- Licensing issues.
- Procedural issues
2.1 Case Study - Cairo

Health

◆ Noise levels are high and aggravated by very old large proportion of the car and taxi fleet.
◆ Vehicle inspections that should limit exhaust gas pollution are mostly ineffective.
◆ No NMT policies in place, despite this walking levels in Cairo are very high.

Climate change

◆ The transport sector is responsible for:
  o 28 % of the final energy consumption in Egypt
  o 25 % of energy related CO$_2$ emissions
2.1 Case Study - Cairo

Social exclusion
◆ No data available about the mobility pattern of elderly and women
◆ As such, special policies for these groups are absent
◆ Urban poor: Cairo has been one of the most successful cities in making its public transport services affordable

Human dimension
◆ Existence of informal settlements and modern cities reflect spatial segregation and socio-economic disparities.
◆ Residents of informal settlements do not have direct access to a reliable and modern public transport system
◆ Lack of safe and direct walking routes between places where people live and where they need to work
## 2.1 Case Study - Cairo

### SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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</thead>
<tbody>
<tr>
<td>• Strategic location as an economic hub (great economic potential)</td>
<td>• Chronic traffic jams</td>
</tr>
<tr>
<td>• Global recognition as an economic centre</td>
<td>• Poor road safety record</td>
</tr>
<tr>
<td>• Political stability</td>
<td>• Poor public transport system</td>
</tr>
<tr>
<td>• Investment opportunities/climate</td>
<td>• Large area, large population and rapid growth are difficult to manage</td>
</tr>
<tr>
<td>• Large and diverse population</td>
<td>• High motorization</td>
</tr>
<tr>
<td>• Centre of agglomeration areas</td>
<td>• No recognition of NMT policy</td>
</tr>
<tr>
<td>• GCTRA - the beginning of coordination of activities</td>
<td>• Weak enforcement of traffic laws</td>
</tr>
<tr>
<td>• High demand for public transport</td>
<td>• Lack of capacity</td>
</tr>
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<td></td>
<td>• Concentration of activity in Cairo</td>
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<td></td>
<td>• Lack of public transport and NMT planning in existing New Cities</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Large population</td>
<td>• Insufficient (transport) infrastructure</td>
</tr>
<tr>
<td>• Robust economy</td>
<td>• Weak technology and innovation</td>
</tr>
<tr>
<td>• Growth to be concentrated outside of Cairo</td>
<td>• Risk of climate change</td>
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<tr>
<td>• Attractive for investment</td>
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</table>
2.1 Case Study - Cairo

**Critical Success Factors**

- Travel Demand Management (TDM)
- Increasing revenues and reducing inefficiencies
- Private sector and competition in provision of Public Transport Services.
- Enforcement
- Maintenance
- Institutional Set Up
- Institutional Capacity Building
- Attracting, Retaining, and Training Staff
2.2 Case Study - Dakar

Overview:
- The capital and biggest city of Senegal
- Administrative and economic centre of Senegal
- Home to 23% of the Senegal population and only 0.3% of the national territory.
- Majority of the country’s administrative, military, economic and industrial activity concentrated in Dakar and specifically in the Plateau area.
Transport network and infrastructure

- Experiencing the impacts of unbalanced urban development
- Physical separation of activities
- Primacy and monocentricity
- The movement is directed to the Plateau area throughout the day
- Unregulated modal mix on the streets
- Ubiquity of street markets, vendors and informal activities
- Interaction of slow and fast modes reduces the overall performance of the streets
2.2 Case Study - Dakar

Land use and urban form

The administrative region of Dakar and the four departments.

Source: 2025 Urban Master Plan (JICA, 2014)
Mode availability and shares

- 80% of trips in Dakar are made by NMT yet NMT is largely neglected.
- Very small part of the population owns and uses private cars which are occupy the largest part of the road space.
- Limited availability of public transport and the biggest share of commuters are using minibuses.
- Minibuses are old and operated by private operators
- Train service connects the city with the suburbs, which is old and has limited capacity and frequency.
2.2 Case Study - Dakar

Freight and servicing

- Significant port activity with around 200 trucks leave the port every day to go to other areas in Senegal or other countries.
- A freight train line linking the port to Bamako, Mali, which is the only landlocked country directly dependent on the port of Dakar.

Road safety

- Despite the completely unregulated traffic on the streets, the existing modal mix acts as unintentional traffic calming, lowering vehicles’ speeds and allowing vulnerable users to make their way through the traffic.
2.2 Case Study - Dakar

Human Dimension

- Dakar is characterised by vibrant human activity and interaction in all its areas.
- Concentration of markets around transport make an equally significant contribution to maintaining the identity, culture and economy of the city.
- Social element of the city is alive through its markets and everyday trade.
2.2 Case Study - Dakar

Transport Measures

- CETUD - significant control over the transport operations. However, there is still significant fragmentation.
- Currently developing plans to change its monocentric structure and is collaborating with JICA to develop a new urban development plan, coordinated with a transport plan.
- A replacement scheme is currently in place to replace the old minibuses with newer ones.
- Local authorities are making significant efforts to develop comprehensive and integrated transport plans as well as regulations to govern external support mechanisms (eg new PPP regulations)
### SWOT analysis

#### Strengths
- Political stability
- Institutional reorganisation and strengthening
- Support from multilateral funding organisations
- Population is still relatively small
- Urban sprawl is still controlled
- Social stability and solidarity
- Existing high level coordinating body

#### Weaknesses
- Lack of funding
- Lack of strategic location
- Lack of official frameworks in key areas such as driver education, PT regulation
- Limited institutional coordination and stakeholder engagement

#### Opportunities
- Strongest economy in the West African region
- Low development in certain areas; opportunities to limit sprawl, increase densities, mixed land use
- Political commitment to change

#### Threats
- Interest for investment still growing but projections cannot be reliable
- Increasing motorisation
- Culture of prioritisation of motorised modes
- Transport can be seen as a secondary issue and prioritised over more pressing issues such as poverty, sanitation, housing
2.3 Case Study - Jakarta

Overview

- Population of the Jabodetabek Metropolitan Area in 2010: 28 million
- The largest metropolitan area in South East Asia
- In the last decade, population has been increasing by approximately 4.5% per year
- Currently, the population density is more than 15,000 people/km²

<table>
<thead>
<tr>
<th>Province</th>
<th>Regency/City</th>
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</thead>
<tbody>
<tr>
<td>DKI Jakarta Province</td>
<td>North Jakarta City</td>
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<td></td>
<td>South Jakarta City</td>
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<tr>
<td></td>
<td>Central Jakarta City</td>
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<td></td>
<td>East Jakarta City</td>
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<td></td>
<td>West Jakarta City</td>
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<tr>
<td>West Java Province</td>
<td>Bogor Regency</td>
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<td>Bekasi Regency</td>
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<td>Bogor City</td>
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<td>Bekasi City</td>
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<td>Depok City</td>
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<td>Banten Province</td>
<td>Tangerang Regency</td>
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<td></td>
<td>Tangerang City</td>
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<td></td>
<td>South Tangerang City</td>
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</tbody>
</table>
2.3 Case Study - Jakarta

**Transport network and infrastructure**

- Population growth results in travel demand growth
- Road network is insufficient to meet the increasing traffic demand
- Traffic congestion has been a chronic problem (estimated cost USD 3.4 bln per year)
- Jakarta as the main centre of activities in Jabodetabek has generated longer daily commuting trips
2.3 Case Study - Jakarta

Land use and urban form

- Polycentric urban structure with Jakarta as the main centre for governmental and commercial activities

Mode availability and shares

- In 2013, there were 25.7 million trips per day in Jabodetabek
- More than 50% of the trips were made by motorcycles.

Source: Jakarta Transportation Agency in Figures, 2013
2.3 Case Study - Jakarta

Mode availability and shares
2.3 Case Study - Jakarta

MRT Jakarta route network

Planned LRT routes

Source: MRT Jakarta, 2015

Source: Detik Finance, 14 July 2015
2.3 Case Study - Jakarta

Mode availability and shares (NMT)
2.3 Case Study - Jakarta

Freight and servicing

- Freight transport relies heavily on city arterial roads → direct highway access to the Port is under construction
2.3 Case Study - Jakarta

Institutions and organisational structure

- Nonexistence of an authority that coordinates transportation developments for Jabodetabek

Urban transport infrastructure financing

- Only 30% of total investment can be covered by the national government
- Pro-PPP policy since the early 2000s
- A state owned company was established to facilitate the cooperation
- Conducive investment climate needs to be improved
- Indonesia Infrastructure Guarantee Fund (IIGF) was established to give guarantees against projects risks
- Lack of experienced staff to manage the projects
2.3 Case Study - Jakarta

Health

◆ Fast urbanization and industrialization have produced severe air pollution problems

◆ Motorized vehicles are the main sources of air pollution, and contribute to 80% of air pollution in Jakarta

◆ 50% of Jakartans have experienced illnesses related to air pollution

◆ Emissions checks began in 2007 for only heavy duty diesel vehicles → hampered by poor regulations, weak enforcement, capacity and a lack of reliable information

◆ Low physical activity: high dependency on motorised vehicles (even for a short journey)
2.3 Case Study - Jakarta

Climate change
◆ Jakarta is located close to the sea’s edge → vulnerable to rising sea levels and has constantly been at risk of flooding.
◆ ‘Blue Sky’ local regulation in 1996
  o CNG fuel for the BRT fleet
  o Euro II for cars, Euro III for motorcycles

Social exclusion
◆ Absence of special policies for disabled people
◆ No demand vs cultural issues
◆ Increased gender and urban poor inclusion in public transport
2.3 Case Study - Jakarta

Accessibility to public transport for people who live in informal settlements

Physical segregation between low-income and high-income areas

Increased income inequality, higher rates of unemployment and poor health services

Jakarta

Formal

Informal

Some areas affluent and poor

Kebe von Kacang area

Trans jakarta busway corridor

Financial district area

Trans jakarta busway corridor
2.3 Case Study - Jakarta

Transport measures

- **Under construction**
  - MRT / Subway
  - LRT / Monorail
  - BRT / Busway
  - Waterways

- **Not fully implemented yet**
  - The only high quality PT, the world longest route

- **Low effectiveness, weak enforcement**
  - 3 in 1
  - Road Pricing
  - Parking Restraint

- **High effectiveness**
  - Park and Ride
  - Road Network
  - Pedestrianisation / NMV
  - ATCS / ITS

- **Being prepared/tested**
  - Being constructed whenever possible

- **Neglected**
  - To be implemented
## 2.3 Case Study - Jakarta

### SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political and economic capital</td>
<td>Pertinent traffic jams</td>
</tr>
<tr>
<td>Large population</td>
<td>Poor public transport system, especially to connect the peripheral areas and the centre of Jakarta.</td>
</tr>
<tr>
<td>Centre of agglomeration area</td>
<td>Large area, large population and rapid growth are difficult to manage</td>
</tr>
<tr>
<td>Government's willingness to invest in the transport sector</td>
<td>High motorization</td>
</tr>
<tr>
<td></td>
<td>Low recognition of NMT policy</td>
</tr>
<tr>
<td></td>
<td>Shortage of electricity</td>
</tr>
<tr>
<td></td>
<td>Poor regulations, weak law enforcement, and lack of capacity</td>
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<tr>
<td></td>
<td>Low urban poor inclusion</td>
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<tr>
<td></td>
<td>Absence of single transport authority for the metropolitan area</td>
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</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large population</td>
<td>Insufficient transport infrastructure</td>
</tr>
<tr>
<td>Robust economy</td>
<td>Weak technology and innovation</td>
</tr>
<tr>
<td>Accommodates lots of economic headquarters</td>
<td>Risk of climate change</td>
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<tr>
<td>Attractive for investment</td>
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<tr>
<td>Many on-going transportation projects</td>
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</table>
2.3 Case Study - Jakarta

Critical success factors

- Establishment of Jabodetabek Transportation Authority (JTA)
- Increasing capacity building
- Strengthening and improving TransJakarta
- Strengthening parking regulation
3.1 Lagos

Overview

- Most populous metropolitan area in Africa
- Economic nerve centre of the country
- Road transport dominates >90% of all urban movement
- Roads are frequently congested → commuter spends >3 hours per day in traffic
- BRT is the only high quality mass transit system
- Unregulated buses dominate the mode share
- Existence of Lagos Metropolitan Area Transport Authority
- Strategic Transport Master Plan is developed (urban rail, BRT, waterways and cable car)
- PPP scheme for the implementation of public transport projects
3.1 Lagos

Overview

- Walk trips count for 40% of total trips, however NMT has a low policy recognition
- High accident rates involving NMT users → promote private car ownership
- Road traffic as the major source of air pollution in the city
- Limited mobility for women
- Urban poor exclusion
- Slums upgrading projects are being undertaken in the last decade
### 3.1 Lagos

#### SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic location as the economic hub of West Africa (great economic potential).</td>
<td>Massive daily traffic congestion</td>
</tr>
<tr>
<td>Extensive waterfronts, water bodies and port facilities.</td>
<td>Inadequate and overburdened transport infrastructure</td>
</tr>
<tr>
<td>Global recognition as an economic centre.</td>
<td>Low recognition of NMT policy</td>
</tr>
<tr>
<td>Large and diverse population</td>
<td>Poor freight transport planning</td>
</tr>
<tr>
<td>High demand for public transport</td>
<td>Housing shortage</td>
</tr>
<tr>
<td>Existence of LAMATA as Transport Authority and its willingness to expand public transport network.</td>
<td>Social and economic exclusion</td>
</tr>
<tr>
<td></td>
<td>Increasing poverty rate</td>
</tr>
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<td></td>
<td>Rapid population growth</td>
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<td></td>
<td>Poor regulations, weak enforcement, and lack of capacity</td>
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<td></td>
<td>Low gender and urban poor inclusion</td>
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<tr>
<td></td>
<td>Poor road safety (very high accident rate)</td>
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<td></td>
<td>Poor air quality</td>
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<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harbours almost all the headquarters of the multinational companies in the country.</td>
<td>Uncontrolled urban sprawl due to high rate of in-migration</td>
</tr>
<tr>
<td>Attractive for investments.</td>
<td>Unsafe urban environment and terrorism</td>
</tr>
<tr>
<td>Growing economy.</td>
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<tr>
<td>High mode share of walking.</td>
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</tbody>
</table>

- Strengths
- Weaknesses
- Opportunities
- Threats
Overview

- Capital and most populous city in Bangladesh.
- Population grew rapidly after 1949 accompanied by lack of urban growth management leading to chronic shortage of housing, excessive overcrowding, traffic congestion, increasing informal economic activities and also, air, soil, water pollution, slum development in flood prone areas and public health conditions.
- 21 million trips per day - 5% by car, (80% of the limited road space), 5% by bus (occupying 5% of road space) and 58% carried out by NMT (walking, cycling, rickshaws).
- Majority of road accidents involve pedestrians. National campaigns for road safety have had a minor impact.
- Very vulnerable to climate change: major housing locations in flood prone areas, rivers surrounding the city.
3.2 Dhaka

Transport measures

- Dhaka Transport Coordination Authority (DTCA) established in 2001
- Funding to improve its traffic conditions and infrastructure eg Dhaka Urban Transport Project. Focused on key infrastructure projects but made little improvement and unsatisfactory progress.
- Among the cities with the worst air quality in the world. The banning of leaded petrol and two stroke vehicles in 1999 and 2003, the promotion of compressed natural gas and the introduction of air pollution control devices have led to a slow but steady improvement.
## SWOT analysis

### Strengths

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<tbody>
<tr>
<td>1</td>
<td>High densities</td>
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<tr>
<td>2</td>
<td>Availability of financial support from international organizations</td>
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### Weaknesses

<p>| | |</p>
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<tbody>
<tr>
<td>1</td>
<td>Extremely large mismatch of supply and demand</td>
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<td>2</td>
<td>Air pollution</td>
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<tr>
<td>3</td>
<td>Chronic congestion</td>
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</tbody>
</table>

### Opportunities

- Social cohesion
- Political stability
- Political willingness to make transport more sustainable

### Threats

1. Lack of urban management
2. Threats of flooding
3. Rapidly increasing population
4. Slow development of infrastructure
5. Informal transport and housing sectors
3.3 Istanbul

Overview

◆ Rapid growth after the WW1 – became centre of the Turkish economy.
◆ City changed from a double centred form to multicentre on both European and Asian sides.
◆ Due to its strategic location Istanbul processes 60% of Turkey’s trade volumes.
◆ Lack of integration of logistic activities as well as lack of investment in rail.
◆ Logistics heavily rely on road transport
◆ Istanbul has a comprehensive public transport system but still suffers from extreme traffic conditions as a result of population and car ownership growth.
3.3 Istanbul

Transport measures

- Istanbul’s urban transport authority, IETT, created in 1939
- IETT is responsible only for the public transport system and for the management and inspection of Private Bus Transit Services. Private operators are coordinated by the municipality.
- Although public transport is well developed in Istanbul, the city has not yet developed its seaway and rail networks for transport - this is significant opportunity for congestion relief.
- The strategic location of Istanbul and long history contribute to its multicultural environment and of social cohesion. Nevertheless the issues of social exclusion of the poorer citizens persist and are deteriorated by the extreme traffic conditions.
### 3.3 Istanbul

**SWOT analysis**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>- Existing comprehensive public transport network</td>
<td>- Different levels of accessibility for different social groups</td>
</tr>
<tr>
<td>- Strong political commitment</td>
<td>- Higher demand than current capacity</td>
</tr>
<tr>
<td>- Multimodality</td>
<td>- Central authority still does not have total control of all transport modes and operators</td>
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<tr>
<td>- Economic strength and growing Turkish economy</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>- Undeveloped rail and water transport network</td>
<td>- Increasing car ownership levels</td>
</tr>
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<td></td>
<td>- Urban sprawl</td>
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</table>
3.4 Karachi

Overview

- Largest urban and economic centre in Pakistan - increase in population due to external migration.
- Monocentric form, lack of basic facilities and infrastructure – nearly 50% of the population currently lives in informal settlements. Very high densities in central areas.
- Public transport options are few and unreliable, long commuter trips are the norm, the number of private cars is increasing.
- Minibuses, reckless driving.
- Lack of continuity of transport improvement programmes as institutions change, lack of subsidies, complete lack of management of the private sector.
3.4 Karachi

Transport measures

- Sindh Transport Department - formalise the network of informal minibuses (*qingqi*) by assigning routes and giving licenses. Still, the rise in *qingqi* has aggravated concerns of congestion and air quality.

- Examining option of BRT to relieve the traffic conditions and offer better accessibility – financed by Asian Development Bank.
### SWOT analysis

#### Strengths
- High densities
- Existing modal split

#### Weaknesses
- Number of private cars increasing daily
- Unregulated bus market
- Limited offer and increasing demand for transport
- Long commuter trips
- Higher number of motorbikes as a solution to low availability of other modes – dangerous and polluting, unregulated

#### Opportunities
- Strong private sector with good knowledge of the city’s transport needs
- Growing economy

#### Threats
- Social instability and lack of cohesion
- Lack of institutional cooperation
- Ad hoc densification and urbanisation can have long term impacts on transport patterns
- Vision for a world class city focused on economic growth rather than long term sustainability
3.5 Tehran

Overview

❖ Biggest and most populous city in Iran.

❖ Long period of non integrated planning and inefficient zoning policies from the end of WWII until 2001 - published a new urban plan and developed strategies for strategies for natural and built environments, transport, social, cultural and economic issues, urban management, and the city’s regional, national and international role.

❖ High cost of private vehicles and long period of low availability of PT have given rise to informal transport that operates in a haphazard fashion.

❖ High share of private cars: 22% of trips are made by bus, 23% by shared taxi, 10% by metro, 10% by minibus, 7% walking and cycling (NMT) and 28% by private car
Transport measures

- Bike sharing introduced in 2009.
- Clean air act in 1995
- Strong political leadership and institutional reorganisation
3.5 Tehran

Master Plan

- 42% target share for mass transit 2030 (metro and rail):
- Bus and Railway being the primary, high capacity modes of the public transport network (with both public and private sector involvement);
- Vans and Taxis as the second level providing complementary services to the above (mainly with the involvement of the private sector);
- Priority would be given to public services in the design of the road network.
### 3.5 Tehran SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong commitment to sustainability</td>
<td>Lack of complete integration of private bus operators</td>
</tr>
<tr>
<td>Growing, comprehensive public transport network</td>
<td>Remaining air quality problems</td>
</tr>
<tr>
<td>Political commitment to pursue existing plans</td>
<td>Remaining congestion</td>
</tr>
<tr>
<td>Engagement of the private sector funding in operations</td>
<td>Existing car oriented infrastructure and previous lack of integration between transport and land use planning</td>
</tr>
<tr>
<td>Existing vision and elaborate plans for the city</td>
<td>Imbalanced public transport supply and demand</td>
</tr>
<tr>
<td>High cost of car ownership</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing perceptions of the public regarding public transport</td>
<td>External influence of oil economy</td>
</tr>
<tr>
<td>International recognition of efforts</td>
<td>Limited financial sources</td>
</tr>
<tr>
<td>Political stability</td>
<td>Institutional lock in and refuse to change</td>
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<tr>
<td></td>
<td>Cultural association of car with wealth</td>
</tr>
</tbody>
</table>
4. General conclusions for OIC megacities

- 7 of the world’s 28 megacities belong to the Islamic World and to developing countries → share common characteristics.
- Integration between transport network and land use still needs to be strengthened
- Public transport is on the rise, but still missing the link with NMT
- Freight transport planning remains a challenge for all countries
- Road safety is generally very poor
- Institutional and organisational structure needs to be strengthened
- PPP as the most common framework for financing transport projects
- Impact of transport problems on health
- Vulnerable for climate change impacts
- Low social inclusion and human planning
## 5. Recommended Policy Actions for OIC Megacities

<table>
<thead>
<tr>
<th>Framework area</th>
<th>Key actions</th>
</tr>
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</table>
| Transport network and land use planning     | Make sure transport infrastructure does not cause fragmentation of the urban environment  
                                            | Plan for land use and transport integration  
                                            | Promote multiple centre and multiple land use development  
                                            | Support TOD                                                                                                                                 |
| Mode availability and shares                | Promote NMT  
                                            | Promote public transport  
                                            | Reduce motorization and car use using fiscal measures                                                                                     |
| Institutional and organizational structure  | Promote central management and planning of operations  
                                            | Clearly define the role of the private sector                                                                                                                                 |
| Freight and servicing                       | Examine particular local needs  
                                            | Enhance international freight links                                                                                                           |
| Urban infrastructure financing              | Seek help with monitoring and evaluation  
                                            | Ensure transparency  
                                            | Clearly define the role of the private sector                                                                                                 |
| Road safety                                 | Provide appropriate training and testing for drivers  
                                            | Raise awareness                                                                                                                                 |
| Health                                     | Ban circulation and import of old vehicles  
                                            | Plan for active transport  
                                            | Use lighter colours in infrastructure                                                                                                          |
| Climate change                              | Plan for resilience                                                                                                                                 |
| Social exclusion                            | Plan for accessible infrastructure  
                                            | Introduce flexible transport services for the elderly, women, the urban poor and people with disabilities                                      |
| Human dimension                             | Support participation  
                                            | Plan for small scale                                                                                                                          |
5. **Recommended Policy Actions for OIC Megacities**

- **Key lessons:**
  - None of the conceptual framework areas should be examined in isolation, all of them interact and affect the stability, acceptability and eventually success of transport policies and strategies.
5. Recommended Policy Actions for OIC Megacities

Key lessons:

- Coordinated actions are required
- Understanding the dynamics of a city to provide integrated planning
- Most lessons learnt to address these challenges come mostly from the developed world → transferability of best practices and become best practice itself

Video about how the Dutch developed their cycling infrastructure and increase the road safety
Thank you for listening

Any Questions?