Presentation on

**B.PAC – Uber report on Sustainable Mobility for Bengaluru**

**DATE: 11TH MARCH, 2020**
THEMES OF THE PAPER

REGULATORY ECOSYSTEM IN BENGALURU MOBILITY
There are multiple regulatory challenges that prevent new mobility service providers to offer sustainable mobility solutions in Bengaluru. Therefore, there is a need to understand the existing regulatory bottlenecks specific to the state of Karnataka and work towards creating a conducive regulatory ecosystem for shared mobility services.

SUSTAINABLE AND GREEN TRANSPORT
The mobility options in the city while addressing the aspects of affordability, speed and comfort should also focus on sustainability. Through a policy push for the usage of alternate fuels and by provision of required infrastructure, green transport could be promoted in the city which is efficient and sustainable.

INCENTIVISING SHIFT FROM PRIVATE TRANSPORT
Bengaluru has a lower share of public transport lagging behind Mumbai, Kolkata, and Delhi. The higher levels of congestion and pollution levels in the city require policy push and infrastructure for the use of public transport by various models of incentivizing which promotes a shift from private modes to public transport.

FIRST AND LAST MILE CONNECTIVITY OPTIONS IN BENGALURU MOBILITY
The usage of public transport can be promoted by ensuring seamless first and last-mile connectivity options. At present, there is no formal integration of first and last-mile connectivity service providers with the public transportation system. The first and last-mile gap could efficiently be solved through low cost and sustainable solutions.
Theme 1: Regulatory Ecosystem in Bengaluru Mobility: Current Context

- The Motor Vehicles Act of 1988 is the principal Act that governs and regulates the road transport, vehicular ecosystem, including permits, penalties, registration, and insurance.
- The recent Amendment of 2019, the Act has introduced certain changes to recognize the new age mobility service providers for the first time.
- “Taxi Policy Guidelines” (MoRTH, 2016); “Moving Forward Together” (NITI, 2018) highlights the importance of shared mobility services to solve congestion.
- In Karnataka, the regulation has not kept pace with the innovations in urban mobility.
- There have been limited or no regulatory interventions for new mobility solutions which provide shared mobility services, technology-based cabs, autos, bike taxis, car and bike pooling.

*Timeline of acts, rules, policies authorities formed relating to motor vehicles in state of Karnataka*
## Intermediate Transport Option and their Regulatory Challenge

<table>
<thead>
<tr>
<th>Intermediate Transport Option</th>
<th>Regulatory Challenge</th>
<th>States that have promoted</th>
<th>States that have banned</th>
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<tbody>
<tr>
<td>Ride Sourcing</td>
<td><strong>Cabs-</strong> Price cap, ban surge pricing</td>
<td><strong>Cabs-</strong> Delhi</td>
<td><strong>Cabs-</strong> Nil</td>
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<tr>
<td>• Cabs</td>
<td></td>
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<td><strong>Bike Taxis-</strong> Tamil Nadu, Karnataka</td>
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<tr>
<td>• Shared Autos</td>
<td></td>
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<td><strong>Shared Cabs-</strong> Tamil Nadu</td>
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<tr>
<td>Ride Splitting</td>
<td><strong>Cabs and Autos</strong> operate on variations of contract carriage permits which do not allow pick up and drop off of passengers from different points. They require Stage Carriage permits to do so which are only given to public buses in the state of Karnataka.</td>
<td><strong>Shared Cabs-</strong> Delhi, Tamil Nadu <strong>Shared Autos -</strong> Tamil Nadu <strong>Shuttle Services-</strong> Delhi, Maharashtra</td>
<td><strong>Shared Cabs –</strong> Karnataka <strong>Shared Autos-</strong> Karnataka <strong>Shuttle Services-</strong> Karnataka</td>
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<td>• Shared Cabs</td>
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<tr>
<td>• Shuttle Services</td>
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<tr>
<td>Ride Sharing</td>
<td>Section 66(1) of the Motor Vehicles Act states that no person can earn a profit with a privately owned vehicle. Carpooling can be used to offset the cost of the trip but cannot be used to make a profit. <strong>Bike Taxis-</strong> Have no regulation looking into their legality, making them illegal.</td>
<td><strong>Carpooling-</strong> Delhi, Maharashtra <strong>Bike Taxis-</strong> Andhra Pradesh, Uttar Pradesh, Rajasthan Haryana, Goa, Gujrat, Punjab, Telangana, Mizoram West-Bengal, Madya Pradesh</td>
<td><strong>Carpooling (for a profit)-</strong> Tamil Nadu Karnataka</td>
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<tr>
<td>• Carpooling</td>
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<tr>
<td>• Bike- Pooling</td>
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<tr>
<td>• Bike Taxis</td>
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<tr>
<td>Car, Bike and Bicycle Sharing</td>
<td>No explicit regulatory challenge.</td>
<td><strong>Bike and Bicycle Sharing-</strong> Karnataka</td>
<td><strong>Nil</strong></td>
</tr>
</tbody>
</table>
Recommendations

Policy Initiatives
1. Formulate a comprehensive policy for shared cab and shared auto to oversee legality and focus on dispute resolution and safety.
2. Promote shared mobility services by providing infrastructural support such as priority parking for shared mobility.

Legislative changes to be made by Karnataka State Government
1. Allow shared cabs, shared autos and feeder with contract carriage permits to legally operate in Bengaluru.
2. Amend the Karnataka On-demand Transportation Technology Aggregators Rules, 2016 to allow for dynamic pricing by aggregators that is based on time, distance and fuel cost.

Provide More Authority to BMLTA
1. The BMLTA should be made a statutory body which has financial and legislative autonomy to ensure that the proposed solutions can be implemented.
Recommendations

Data Sharing
1. The Government of Karnataka (under BMLTA) must consider creating an open digital infrastructure for data that brings the operators, both public and private, together to enable voluntary participation, allowing them to collaborate while being competitive at the same time.

Regulatory Sandbox
1. Karnataka Government should encourage new mobility service providers to operate through regulatory sandbox by allowing them to pilot their solutions in Bengaluru at specific locations and use cases for a specific period.
Theme 2: Incentivizing Shift from Private Transport

Public Vs. Private Transport Share

- Bangalore has a lower share of public transport lagging behind Mumbai, Kolkata and Delhi.
- As of 2017, share of public transport in Bangalore is 48%
- Goal is to achieve 80% public transport
## Current Status of Mass Transit Services in Bengaluru

### BMTC
- Fleet strength is increased only by 7.89% since 2011, whereas the population is increased by 32%.
- Present fleet strength is 6635
- Revenue (daily) has increased from 3.5cr in FY 16-17 to 4.78 cr during FY 18-19
- Service kilometers reduced from 1.28 million during FY 16-17 to 1.15 Million during FY 18-19
- The current ridership is 36 lakh

### BMRCL
- Two metro lines currently in operation: 42.3 km
- Phase 2 (128Km) will be completely operational by 2024, however, a majority of the corridors will be completed by 2021.
- When completed, Phase II is expected to have a daily ridership of 20 lakh people.
- The metro currently has a daily ridership ranging b/w 4.5 to 5

### Suburban railway
- A well-connected suburban rail in the city will be beneficial in connecting the peripheral areas of the city and reducing congestion.
- In the Union budget of FY 20, the Bengaluru suburban railway project was mentioned for Rs. 18,600 crores.
- The central government will fund 20% of the total project cost and the state government will invest another 20% and the balance 60% will be raised through external funding.
- The current ridership is 1.5 – 2 lakh
Recommendations

<table>
<thead>
<tr>
<th>Fiscal Incentives</th>
<th>Non Fiscal Incentives</th>
<th>Fiscal Disincentives</th>
<th>Non Fiscal Disincentive</th>
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<tbody>
<tr>
<td>1. Free bus passes (on one working day of the week on the lines of cycle day to popularise the concept).</td>
<td>1. Real time Passenger Information System (PIS) to be installed in all public transit stations</td>
<td>1. Parking pricing: Strictly implement parking policy that charges a hefty fee for on road and off-road parking with strict enforcement.</td>
<td>• Private vehicles can travel by creating Bus Priority Lanes and transit plus zones</td>
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<td>2. Increase the fleet size of BMTC buses to 15,000 by 2021.</td>
<td>2. Congestion pricing: Implement congestion pricing in high density corridors</td>
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<td>3. Providing priority lanes for shared mobility and public transport would</td>
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<td>4. The smart card based automatic fare collection system</td>
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<td>5. Information integration with paratransit service providers</td>
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Theme 3: First and Last Mile Connectivity in Bengaluru

1. First and last mile connectivity to public transport forms an important part of the travel experience.

2. It is a major incentivizing factor for people to move from private transport to public mode.

3. Existing regulatory framework is not supportive of services of shared cabs and shared auto.

Source: B.PAC Survey
First and Last Mile Connectivity Challenges in Bengaluru

1. Lack of connectivity to public transit from inner localities: The public transit in Bengaluru covers only a few localities leaving the inner localities with limited or no connectivity. There are no feeder bus services currently operational in the city because of which commuters rely on their own vehicle or cabs/autos to reach the nearest transit stations.

2. Lack of shared mobility services to cover the first and last mile gaps: The three-seater shared auto services which operate in certain parts of the city effectively work as a primary medium to cover the first and last mile travel is not allowed to operate legally.

3. Poor infrastructure for walking and cycling: Walking is the most desirable form of first and last mile connectivity. In Bengaluru, 53% of people who travel on public transport walk both their first and last mile, while 18% of them do not walk even one leg of the journey.

4. No integration of services at public transport transit points: Several metro stations in the city do not have parking spaces for rental operators to provide service. Further, the metro stations which have a facility for bus stops outside the metro stations have not been integrated with timings.
Policy Initiatives

The recently amended Motor Vehicle Act has outlined that the State Government can modify the permits issued under the MV Act or formulate schemes and issue licenses to promote last mile connectivity solutions in the city.

Pedestrian Infrastructure

The operators of mass transit services should invest in improving the infrastructure for pedestrians who access their first and last mile by walk. The operator should develop and maintain the footpath for 1 km radius surrounding the transit stations.

Feeder Bus

Reintroducing this service will be able to cater to the last mile travel of commuters. Further, the Transport Department needs to allow private operators to operate the shuttle service from transit stations.
Recommendations

Last mile should be location specific
The last mile solutions need to be planned at a micro level taking into consideration the purpose of travel.

Stakeholder consultation meetings:
The new phase of Metro and Suburban railways are expected to be completed by 2022. The mass transit operators should hold stakeholder consultation meetings with commuters, private operators to introduce feasible connectivity options for first and last mile.
Theme 4: Sustainable and Green Transport in Bengaluru

- As of 2019, there are 10 million trips made per day in Bengaluru.
- In 2030 it's predicted to be 3 times of 10 million trips made per day in Bengaluru.

Its time to move beyond congestion, with the immediate need for reducing carbon emissions and head towards clean, cost-effective and efficient mobility.

Karnataka is the 1st State to have Electric Policy

- Karnataka’s EV policy aims to convert 50% of its entire fleet into EV by 2030, which has shifted the focus to electrification of transportation which is the primary technology pathway to achieve the transformation.
- Currently, the EV market has less than 1% sales in Bengaluru for 80 lakh vehicular population.
Potential Segments

The growth in EV vehicles is likely to happen faster among:
1. Fleet owners,
2. Public transport
3. Employee transport
4. Last mile deliveries
5. Logistics

EV is fast becoming a growing use case for short distance travel.
Challenges for EV adoption

- Limited Pool of EV Manufacturers
- Limited Form Factors for various use cases (especially logistics).
- EV adoption is more challenging for platform aggregators where vehicles are owned by individuals but operated for commercial as well as personal purposes. Personal use requires flexibility in distance travelled and because of range anxiety. Current design of vehicles doesn’t possess the required vehicle strength and often fail on safety standards
- Need of better Battery technology for varying temperature conditions, speed, distance and payload
- Battery Swapping Stations yet to take off
- Less Availability of Charging Stations limits usage
- Use of lead-acid batteries, which need to be replaced within 7-8 months
- Commercial tariffs are still being imposed in states where EV tariffs have been proposed; there is a delay between policy and implementation.
- Land leasing costs for charging infrastructure on private/public lands are high
- Long waiting times for charging and high opportunity costs are discouraging drivers from making the switch to EVs
- Rapidly changing technology, unfavoured operational conditions and high cost

Hurdles in EV adoption
- High EV costs
- Challenges to battery technology
- Limited range of evs,
- Lack of charging infrastructure
Challenges for EV adoption

- The lack of proper parking facilities for EVs leads to damage of the vehicle and adversely affect the possibility of charging the vehicle.
- Rental EV witness theft and vandalism.
- Lack of proper financing models to support the upfront high cost of the vehicle.
- Resale value decreases as form of the vehicle is customised.
- Lack of comprehensive regulatory framework Absence of safety and compliance standards.

Hurdles in EV adoption

- High EV costs
- Challenges to battery technology
- Limited range of evs,
- Lack of charging infrastructure
## Recommendations

**Short term 2020-22**

- FAME II must include under 60km EV and inclusion of e-NMV in EV Policy of GoK
- EV definition to include vehicles without pre-installed batteries, treating electric vehicles and batteries as separate entities and extending demand incentives for both
- Implement electric vehicle parking regulation
- Establish low/zero emission zones

**Medium term 2022-30**

- Green mile incentives for every km run using EV which will encourage fleet operators in reporting number of EV trips
- Create research hubs and incubation centers
- Incentivize end-of-life recycling

**Long term 2030 onwards**

- As we move closer to the all-EV goal, ensure mass retrofit policy for ICEs is in place

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**Karnataka needs to have achievable plan to reach the 2030 target**
Wayforward

Measurements, Monitoring and Reporting

- Universal access
- Transition to sustainable mobility
- Efficiency
- Safety
- Green mobility

Providing multiple choices of public transport with different price points, to meet the requirements of all socio-economic sections.

Measuring success rate and improvement of public transport based on accessibility, efficiency and affordability of last and first mile connectivity options.

Reducing the time spent in traveling, congestion, and cost of travel in a sustainable way.

Reduction in the number of private vehicles on the road will also cause the accidents to decrease.

Set interim goals to reach 20% target by 2022 and 50% by 2025 to reach the EV target of 2030.
Thank You

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