Better Bus Systems

Innovation to drive reforms in the public bus sector in India

Better Bus 2018

AN INNOVATION CHALLENGE

#BetterBus

The extraordinary urbanization challenge

- Globally, 800 million per decade

- India's urban population will double to 800 million by 2050

Source: UN Habitat; UN World Urbanization Prospects 2014 Revision; Image: Business Line

OVERVIEW OF PUBLIC BUS TRANSPORT IN INDIA

54
public bus agencies

142,855
public buses

15
agencies with ITS

68 million
people served per day

Challenge: **Improve the quantity & quality of bus systems**
- **650,000** Number of buses India will require by 2021
- **Only 18%** Work trips on public transport

NEW MOBILITY SECTOR IN INDIA

The market for new technologies and mobility start-ups is growing rapidly.

512
Active mobility startups

$3.3B
5-year investments

116
Bengaluru- highest number of mobility startups

SOLUTION TYPES FOR BUSES
- Accessibility(on-demand) & passenger information systems (Aggregator model)
- Information tech (PIS)
- Communication & optimization tools (Data analytics)
- Advanced maintenance systems (ITS enabled)
- Energy/fuel management systems
- Electric vehicle tech
- Bus safety, driver behaviour & comfort
- Digital payment systems
- Clean tech for mobility etc.

SOURCE: TRACXN REPORT, 2016 and EBSF-1, 2011

WHAT'S THE ECOSYSTEM LOOK LIKE ?

State and central start ups /IT Cells
State Transit/Transport Agencies

For Profit funds
Impact funds

Government Agencies

Start-ups

TiE, Payment Portals, etc

General Ecosystem Partners

New Mobility ecosystem

Investment Houses/ Funds

For Profit funds
Impact funds

Donors

Accelerators & Incubators

Corporate programs

Existing and new
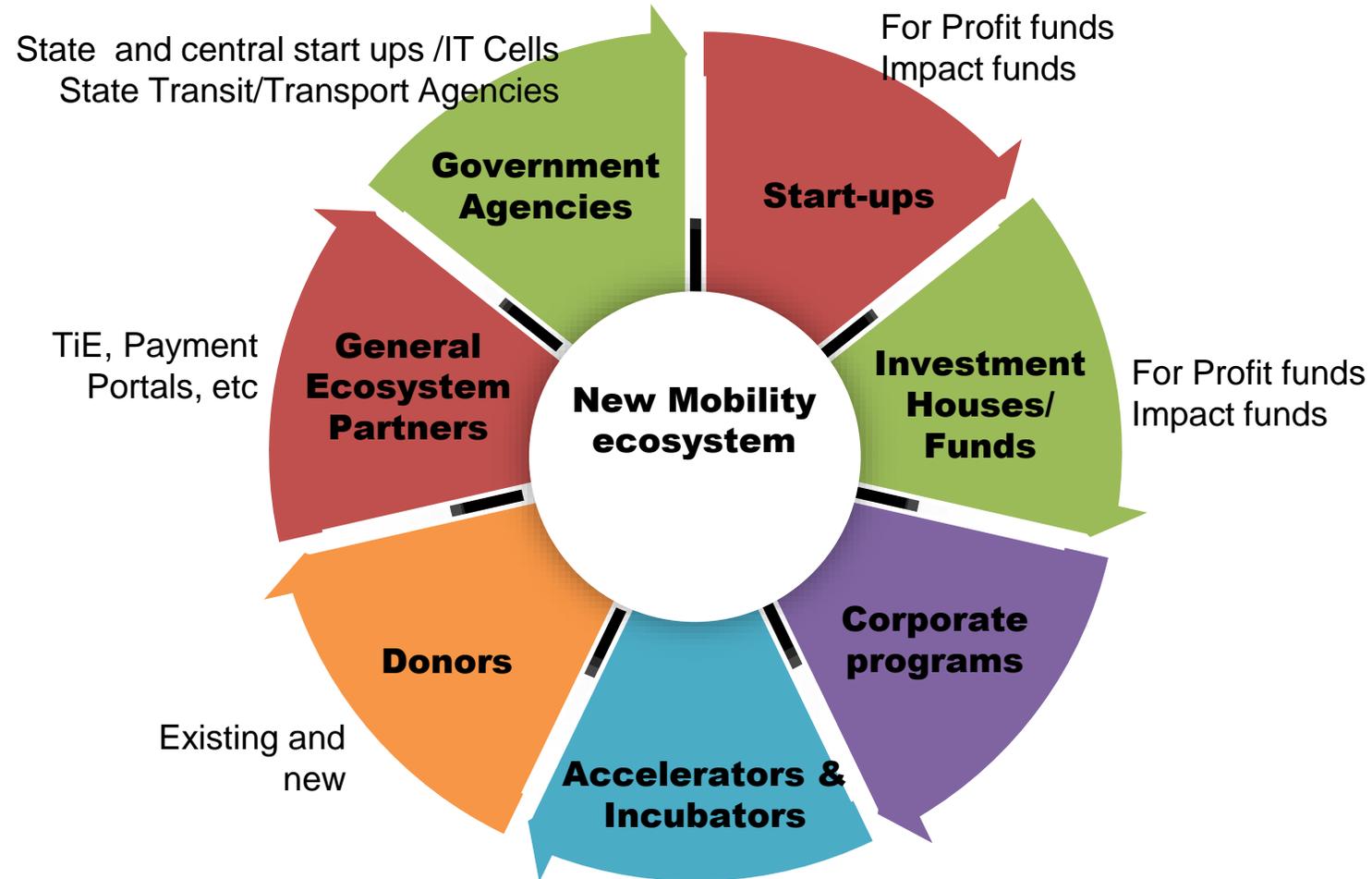
SYNERGY BETWEEN THE PUBLIC AND PRIVATE SECTOR
WHAT CAN WE ACHIEVE?

1. **Utilize transit data:** Make optimal use of transit data through data analytics to aid decision making on improvement of the bus systems

2. **Make transit user friendly:** Provide real-time information to passengers on bus availability and bus arrivals and enable greater multimodal integration between nodes

3. **Leverage new service models:** Improve comfort and accessibility of public transit through new service models which provide provide private on-demand bus services in cities especially in areas requiring premium services and inadequately serviced areas

4. **Foster new technologies:** Adopt new cost-effective technologies which help in improving fuel efficiency and reducing emissions

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OPEN INNOVATION IN PUBLIC TRANSIT

Open Innovation is the process of exchange of knowledge to **accelerate internal innovation** within any system in order to expand the markets for external use of the **innovation.**

BENEFITS

- Yield best solutions in short times
- Targeted & tailored solutions
- Most optimal design/product
- Adaptable / scalable solutions
- Nurture co-creating and partnerships
- Allows for bottom-up solution testing and adoption

CHALLENGES

- Uncertainty regarding performance of solutions
- Regulatory challenge for adoption
- Financing mechanisms
- Engagement of public and private stakeholders

Open innovation will not yield results if the solutions are not replicable (on-ground), impactful and scalable

Open innovation in public transit & impact – MADRID, SPAIN
EUROPEAN BUS SYSTEMS of the FUTURE

OBJECTIVE

To validate different innovative solutions that combine efficiency of the bus system with more attractiveness.

Solution: Innovative multimodal real-time information system

Key features: Provides information via web, SMS, displays in vehicles, terminals, stops and interchanges

Passengers benefits:
Reduces wait-time

Operator benefits:
Improve reliability and punctuality of bus service by help manage routes, schedules, incidents

Impact:
- 3% increase in punctuality
- 6% improvement in perception of quality of bus service
- 6% increase in number of trips per person

Open innovation in public transit – INDIA
BETTER BUS CHALLENGE

OBJECTIVE	To augment operations, management and quality of public bus transit systems by enabling the co-creation of innovative solutions within the urban mobility ecosystem
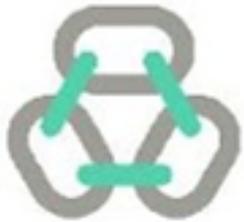
Operations & management

Commuter experience
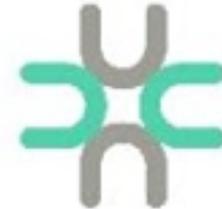
New service models

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BETTER BUS PROJECT - PILOTS

BUS AGGREGATOR MODEL

DIESEL TO ELECTRIC CONVERSION KIT

AIR FILTER TECH

MUMBAI

BANGALORE

MYSORE

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REGULATORY CLIMATE

- **50+ Schemes** to promote innovation within start-up ecosystem in India

- **Regulatory reforms** to create a level playing field for SMEs and startups

However, government tenders remain to be out of reach for startups in the country.

Public Procurement: TenDER vs. ChalLENGE

TENDER

- Public procurement in transport sector is done through tenders
- Tenders require specifying the end product/service in detail
- It eliminates young companies with innovative products
- It eliminates companies with lower turn-over's

CHALLENGE

To address these issues a collaborative model needs to be created through partnerships between government agencies and start-ups with an aim to provide a platform to test solutions that address specific urban mobility issues in Cities

CHALLENGES TOWARDS FOSTERING INNOVATION IN EXISTING PUBLIC TRANSIT SYSTEMS

Regulatory

- Limited adoption of existing guidelines
- no single window clearance system

Financial

- Lack of financial mechanisms for transit agencies to leverage and test innovative solutions

Operational

- lack of capacity within transit agencies to identify the need for innovative solutions
- Limited networking capacity of transit agencies and startups to to identify and facilitate adoption

OBJECTIVE OF THE SESSION

To identify potential pathways to overcome the **regulatory, financial and operational challenges** associated with fostering innovation in the existing public transport ecosystem

Regulation:

- What are the regulations that currently govern public private engagement in the mobility sector?

- What are the regulatory reforms that are required to foster such relationships?

Finance:

- What are the financing mechanisms required to foster such engagements?

- Who pays for the development and testing the impact of new technologies and solutions?

Operations:

- Who are the key players within the State and local governments best suited to spearhead initiatives to identify and test innovative technology within their public bus systems?

THANK YOU