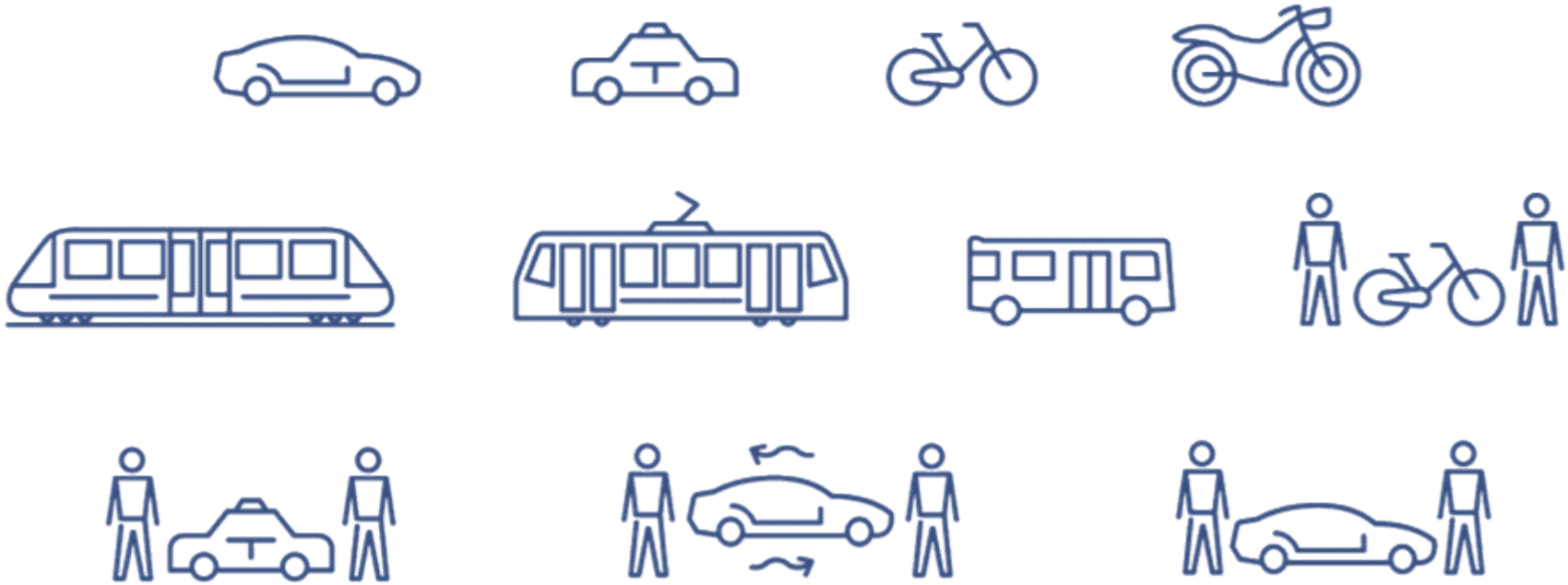
11th Urban Mobility India Conference & Expo 2018

IMPROVING ACCESS TO TRANSIT THROUGH INNOVATIVE TECHNOLOGIES

OPPORTUNITIES AND CHALLENGES OF MULTIMODAL INTEGRATION

Presented by Chaitanya Kanuri, WRI India

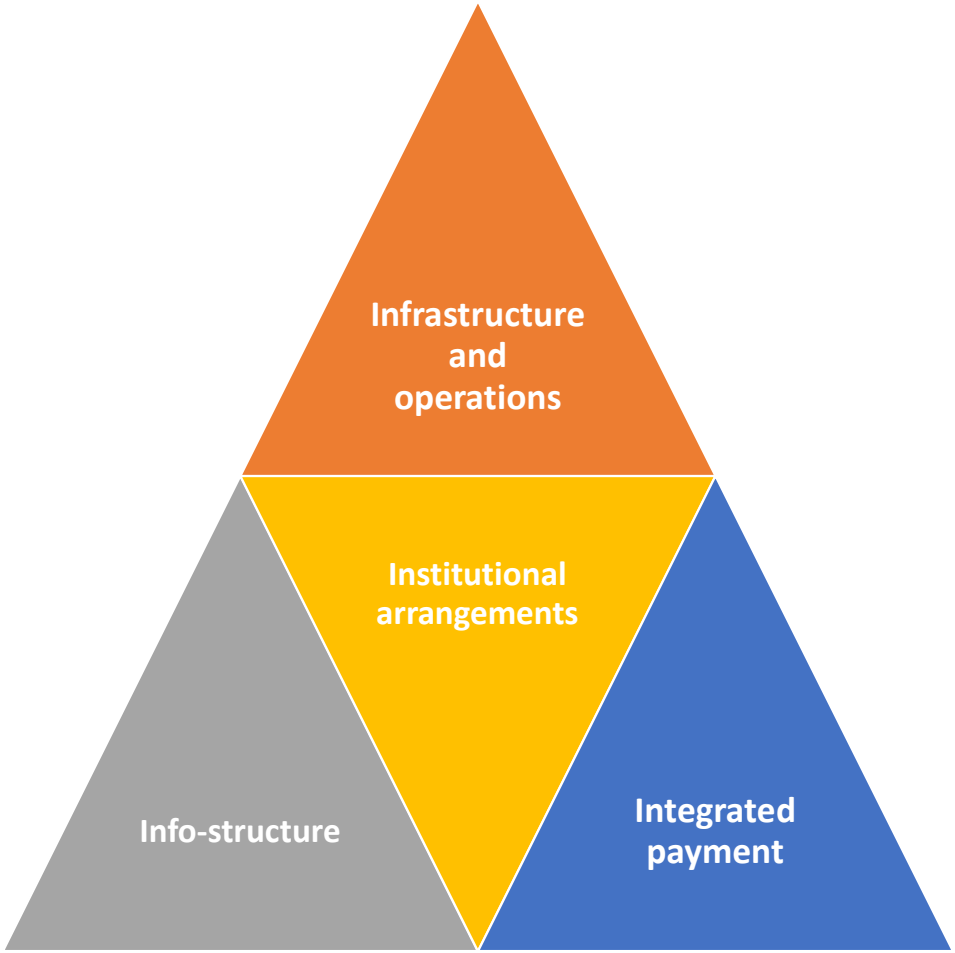
URBAN TRANSPORT: GROWTH IN MODES AND SERVICES



- *There are more options in mobility services than ever before*
- *Can these services provide a viable alternative to personal vehicle ownership?*

Source: https://whimapp.com/

MULTIMODAL INTEGRATION: THE BUILDING BLOCKS



INFORMATION INTEGRATION

- Information availability
- Integration across modes
- Open data

SERVICE INTEGRATION

- Last-mile connectivity through new mobility
- Ease of service delivery and access

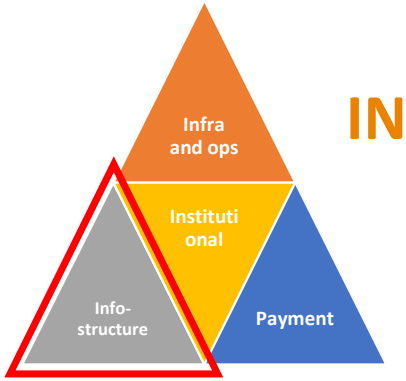
PAYMENT INTEGRATION

- Card and mobile ticketing
- Fare integration
- MaaS

INSTITUTIONAL ARRANGEMENTS

- Opportunities and challenges
- Potential steps ahead

Source: Embarq/WRI



INFORMATION INTEGRATION: FIRST-/ LAST-MILE COSTS

SERVICE AVAILABILITY

- *Frequencies, disruptions/ reductions in service*

SERVICE TIMINGS

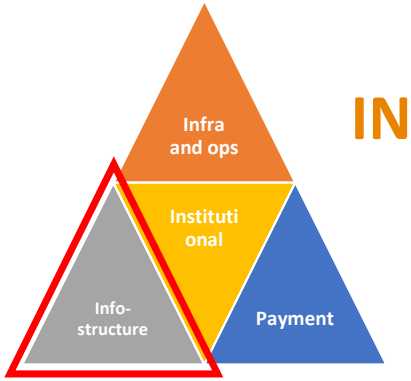
- *Scheduled vs. real-time arrivals and departures*

SERVICE FARES

- *Public transit- telescopic fares*
- *On-demand services- surge pricing*

SERVICE LOCATION

- *Location of stations/ stops routes*
- *Amenities and facilities at stations*

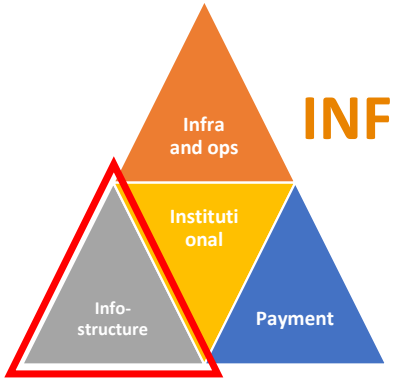


INFORMATION INTEGRATION: REAL-TIME AVAILABILITY

- *15 STUs have ITS- transit apps with real-time bus tracking*
- *Metro agency apps with schedules and trip planners*

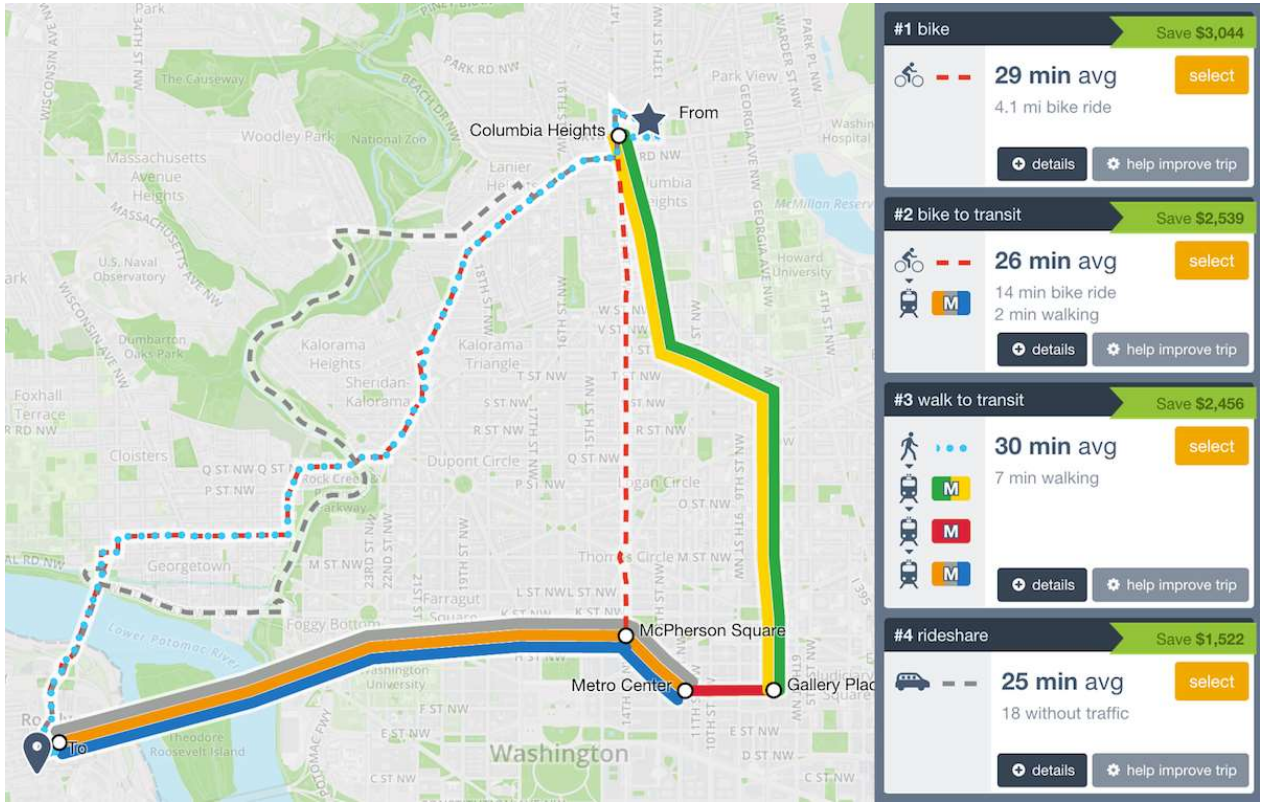
STATIC INFORMATION

REAL TIME INFORMATION



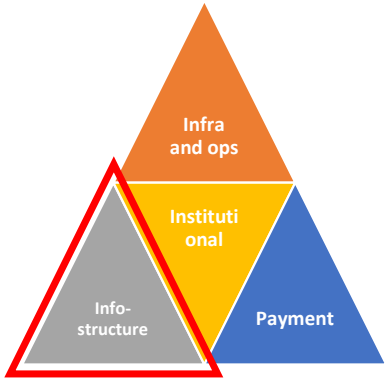
INFORMATION INTEGRATION: MULTIMODAL INTEGRATION

- *Multimodal trip planners options for trips*
- *Commuter preferences considered- cheapest, fastest, fewest transfers, air conditioned, accessible*



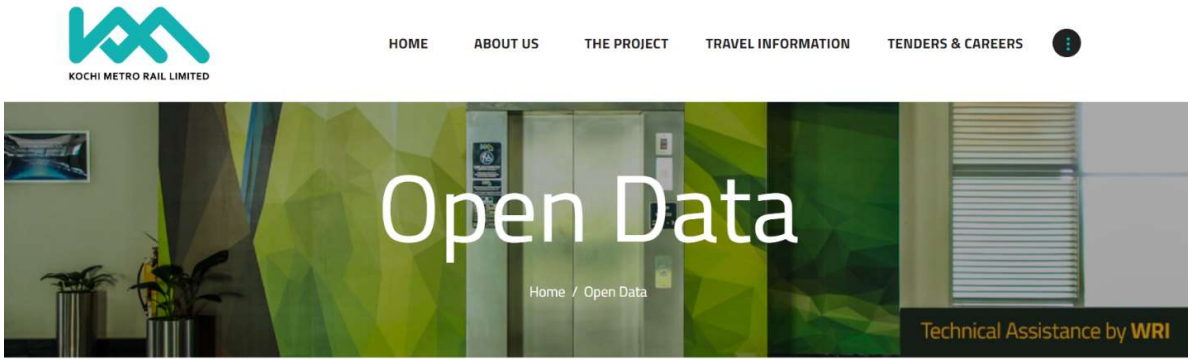
Source: https://mobilitylab.org/2015/03/10/3-ways-multi-modal-travel-is-tricky-for-app-developers/

WRI INDIA ROSS CENTER



INFORMATION INTEGRATION: OPEN DATA

General Transit Feed Specification (GTFS)
An open standard format for exchanging public transit schedules, geographic and fare information



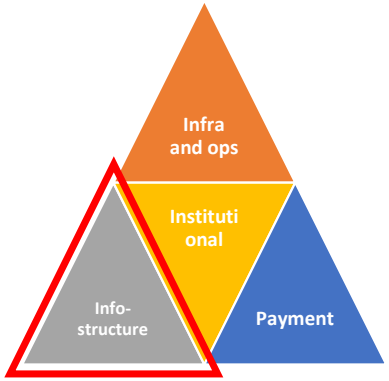
- *KMRL first agency to open up GTFS feed of their static data*
- *Two cities- Kolkata and Surat- sharing real-time data with Google for live transit tracking*

REAL TIME FEEDS

- Metro departures
- Live bus arrivals
- Live traffic disruption

FIXED DATASETS

- Service timetables
- Station locations
- Station facilities

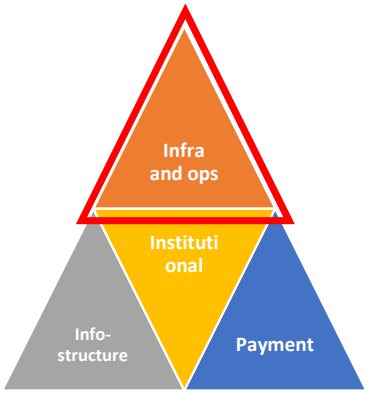


INFORMATION INTEGRATION: THE BENEFITS

- *Study in Bangalore shows potential wait time savings and ridership increases with real-time information availability*
- *Over 350 downloads of the KMRL open data feed*

The TfL case:

- TfL opened up 62 data feeds to developers
- Over 5000 developers registered on TfL platform
- 362 apps powered by TfL data
- 4 million people reached through apps
- 15-58 million pounds of estimated time savings for app users



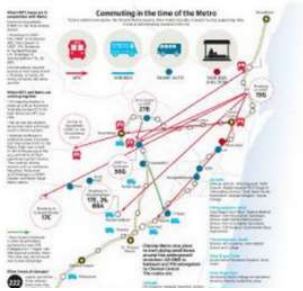
SERVICE INTEGRATION: LAST-MILE CONNECTIVITY

CHENNAI

Missing last-mile connectivity

R Srikanth

SHARE ARTICLE



THE TIMES OF INDIA
CITY

'Need to address Metro commu last-mile connectivity concerns'

Deepika Burli | Updated: Apr 4, 2017, 06:52 IST

BENGALURU: *A citi initiative this time w plugging the issues last-mile connectivi Metro stations. Last Toyota Mobility Fou WRI India launched Accessibility and M Program (STAMP) c*

hindustantimes

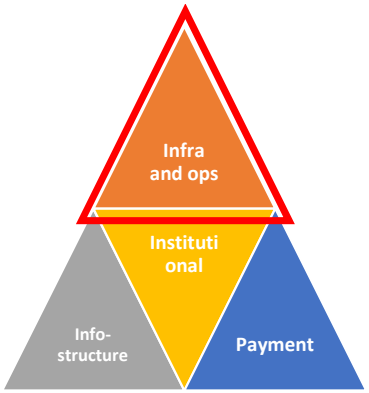
Sunday, Oct 21, 20

Last-mile connectivity a major issue on yet-to-open 9.4km Ghaziabad Metro line

The line is expected to open by November and will cater to nearly one lakh passengers, DMRC officials said

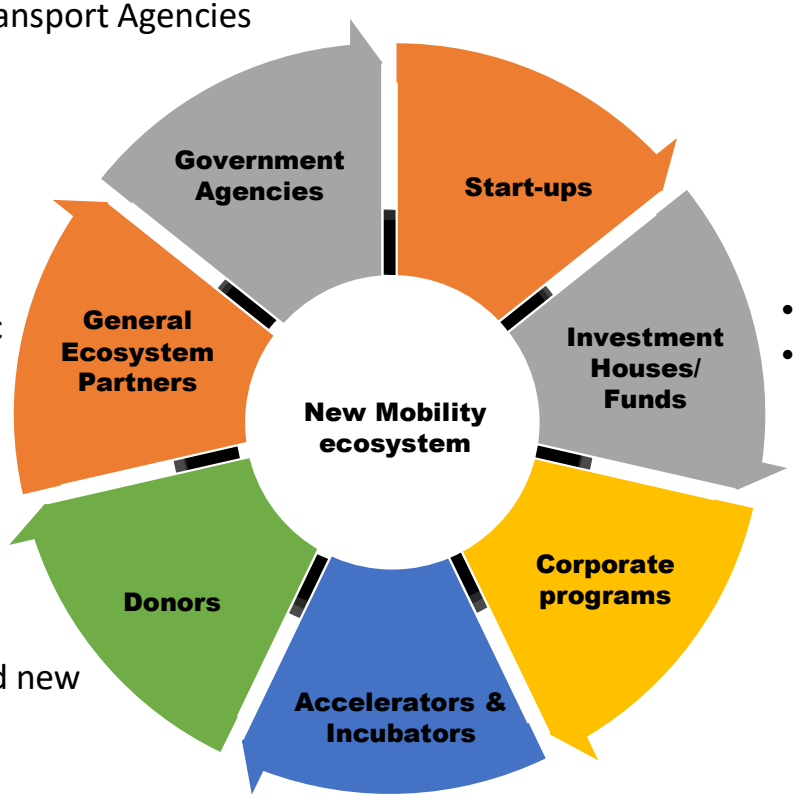
Ghaziabad, India -September 15, 2018: A view of New Bus Stand road, in Ghaziabad, India, on Saturday, September 15, 2018. To find out probable traffic bottlenecks outside the eight stations on the upcoming Metro stretch, the Ghaziabad development authority (GDA) has formed a committee of officials

- *64% potential users currently do not use the metro due to a lack of adequate connectivity to and from the metro stations*
- *The FM and LM together constitute about 40% & 48% of the time and cost of a typical trip while comprising merely 18% of the distance*



SERVICE INTEGRATION: LAST MILE CONNECTIVITY

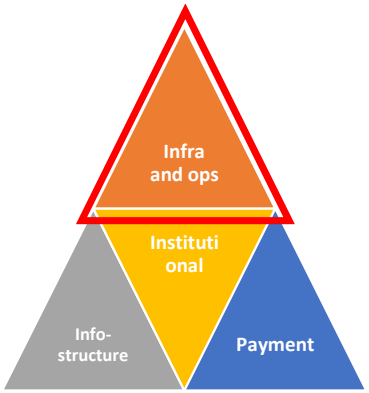
- State and central start ups /IT Cells
- State Transit/Transport Agencies



TiE, Payment Portals, etc

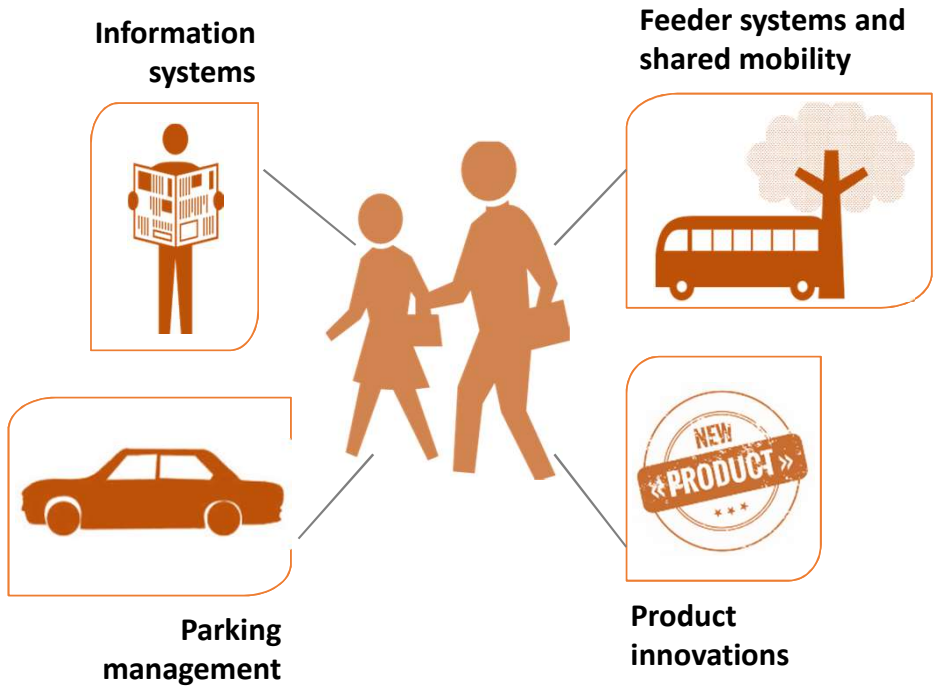
- For Profit funds
- Impact funds

Existing and new

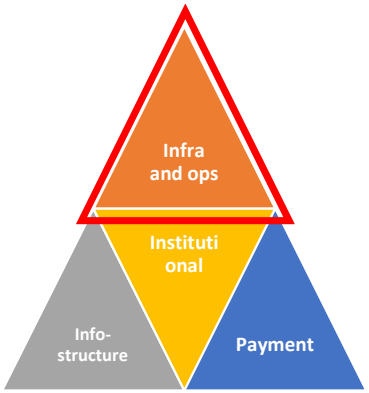


SERVICE INTEGRATION: LAST MILE CONNECTIVITY

The Station Access and Mobility Program (STAMP) has engaged with hundreds of startups for last mile connectivity



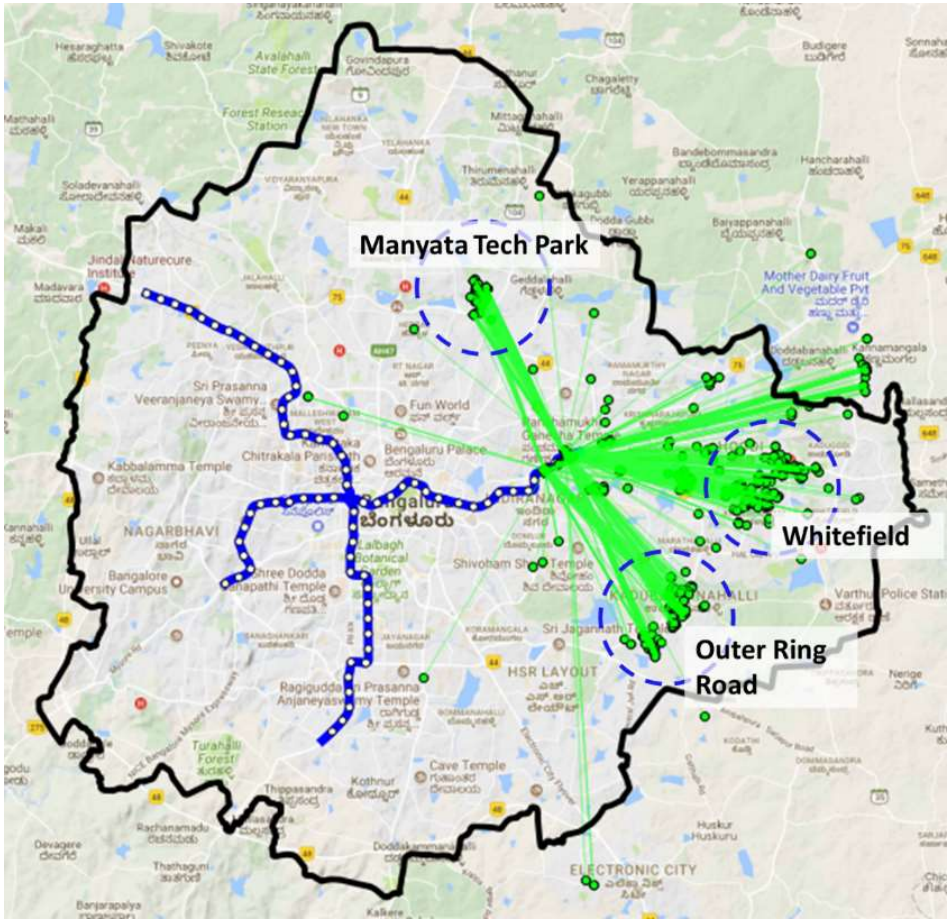
WRI INDIA
ROSS CENTER



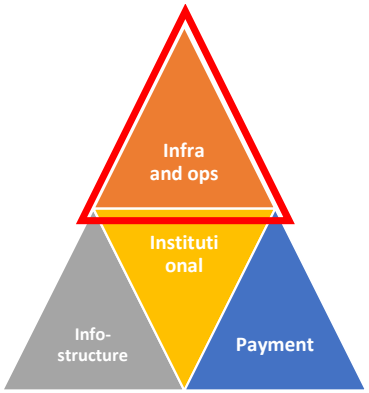
SERVICE INTEGRATION: LAST-MILE CONNECTIVITY

STAMP in Bengaluru

- *Estimated time savings of 3,766 hours for commuters*
- *Increased access to market for mobility startups by INR 27 lakhs*
- *Impact on transit ridership unclear due to lack of service scale*

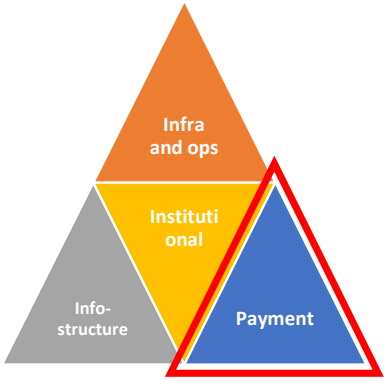


Source: WRI



SERVICE INTEGRATION: LAST MILE CONNECTIVITY

- *In Hyderabad, STAMP is supporting almost 8 last-mile connectivity solutions*
- *STAMP challenge will be scaling to 5 more cities in India over the next 3 years for determining last mile connectivity solutions, AI/Data Innovation technologies*



PAYMENT INTEGRATION: PAYMENTS IN INDIA

Metro rail tickets

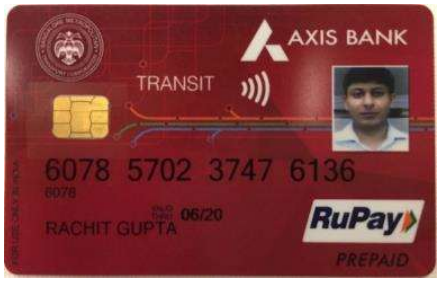
- Token and contactless, smartcard-based
- Proprietary, closed loop, stored value systems
- Experiments with QR-code based mobile ticketing and semi-open loop cards

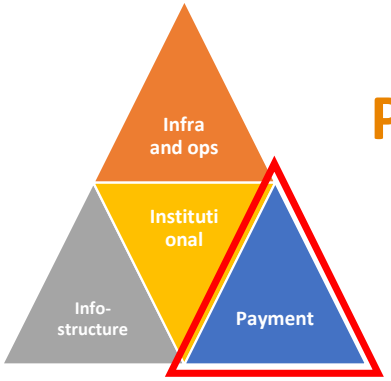
City bus tickets

- Cash-based, printed tickets
- Experiments with semi-open loop cards

New mobility services

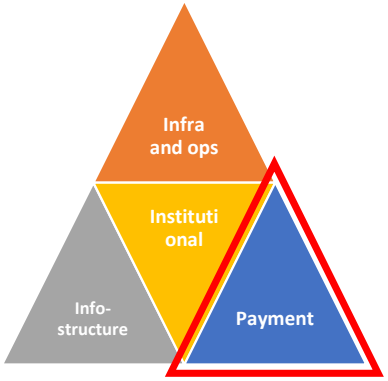
- Options of cash and mobile payments via digital wallets, debit and credit cards





PAYMENT INTEGRATION: COMMON MOBILITY CARD

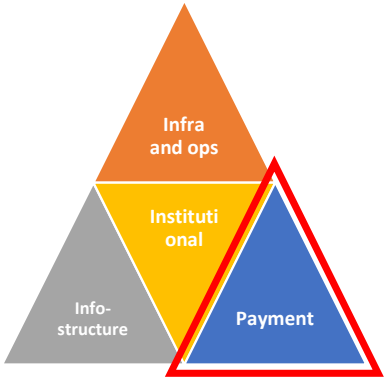
- *Standard bank credit/debit card with wallet and storage for non-financial data*
- *4 lakh NCMC currently issued; 20-25 banks certified to issue NCMC*
- *6 operators live with an open loop bank card ticketing solution*
- *Card can be burnt on phone for mobile ticketing payments*
- *Usable for metros, buses, parking, tolls and low-value retail purchases- including mobility services?*



PAYMENT INTEGRATION: FARE INTEGRATION

Sao Paulo:

- *23 million inhabitants; 40 million daily trips*
- *Semi-open smart card for transit payments*
- *Payment and fare integration across public transit*
- *Free transfers between buses; reduced fares between metro and bus transfers*
- *Fare integration led to jump in PT ridership from 2.2 million to 3.5 million (within first year of introduction*

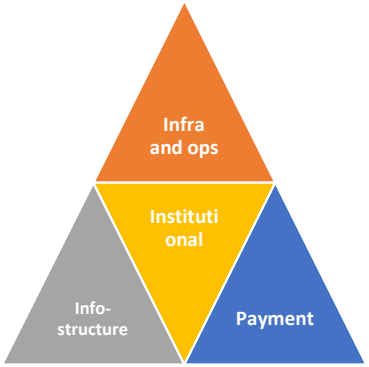


PAYMENT INTEGRATION: MAAS SUBSCRIPTIONS

- In Helsinki, an app for transport subscription plans- currently about 2 million rides a year- compared to PT's 375 million rides
- Helsinki's PT agency does not offer monthly passes on Whim platform
- Finnish government 'Act on Transport Services'- all transport providers to make full ticketing functionality open to third party

	Whim To Go	Whim Urban	Whim Unlimited
Monthly payment	Free	49€	499€
Local public transport	Pay per ride	Unlimited Single Tickets	Unlimited Single Tickets
City Bike	Not included	Unlimited (30min)	Unlimited
Taxi (5km radius)	Pay per ride	10€ per ride	Unlimited
Car rental	Pay per ride	49€ per day	Unlimited
Car share	Coming soon	Coming soon	✓
Cancel anytime	✓	✓	✓
Add-ons incl regional HSL >			

Source: https://whimapp.com/



MULTIMODAL INTEGRATION: THE COMPONENTS

City	Institutional Framework	Multimodal infrastructure elements	Info-structure elements	Integrated payment solutions
London	Transport for London (TFL)	Metro; bus; light rail; trams; taxis	iBus; Web and mobile information systems	Oyster smart card
Paris	STIF	Metro; tram; bus	IMAGE project (real time traffic information)	Navigo pass
Singapore	Land Transport Authority (LTA)	Metro (MRT); bus; light rail; taxis	Web-based and mobile (How2Go) information systems	EZ-Link; NETS FlashPay
Hong Kong	Transport Department, Government of Hong Kong	Metro; bus	Next Train mobile app; passenger information display systems	Octopus smart card
New York City	New York Metropolitan Transportation Authority (MTA)	Metro; BRT; local and express bus	MTA Bus Time	MetroCard

Source: EMBARQ (WRI)

DISCUSSION: BURNING QUESTIONS

- *How do we enable integration in payments? Who are the stakeholders?*
- *What are the opportunities and challenges of integrating public and private mobility services?*
- *What role can UMTA play in accelerating a more integrated, shared mobility ecosystem?*
- *What is the scale of potential impact of shared mobility and how can policy and regulation enhance its benefits?*