Novembre 2022

CALL FOR EXPERTS
GOVERNANCE OF ON-DEMAND MOBILITY SERVICES

UITP Asia-Pacific Centre for Transport Excellence (UITP AP CTE) is conducting a research study *Governance of On-demand Mobility Services.* The study, launched in May 2020, is co-funded by UITP and Singapore's Land Transport Authority.

UITP AP CTE is inviting organisations and individuals to contribute to the study. This document details the research's objectives, methodology and opportunities for experts to participate in this study.

THE RESEARCH STUDY

OBJECTIVES

There are a number of challenges and opportunities arising with the rise of on-demand mobility services, this study aims to answer the following questions:

I. **Review the mobility market attractiveness of cities who are at the forefront of new mobility services**; this refers to multimodal integration maturity, existing governance policies for on-demand mobility services, openness of new entrants (oversea entities) to the mobility market, on-demand mobility services competitiveness and penetration; and national government's innovation vision and investment. This review will also compare with cities where on-demand services failed in the market and analyse the barriers or issues preventing the sustainability of these on-demand services.

II. **Review the current governance structure of various on-demand mobility services from a range of cities.**
   - Which government agencies and departments are responsible for the various on-demand mobility services?
   - What sort of barriers and problems have materialised as government agencies/departments attempt to implement on-demand mobility services, and how have government agencies/departments dealt with them?
   - What are the influencing factors impacting public transport authorities' attitudes and approach to accepting/denying the entry of on-demand mobility services? *(Understand the linkage between local public transport policies, macroeconomics and innovation policies.)*
   - What are the roles and responsibilities between the public and private players in the sub-sector of on-demand mobility services?

III. **Review the business models of the on-demand mobility services,** including models offered by private organisations, public/publicly-owned entities or public-private collaboration. The review will cover:

- Pricing
- Technical requirements for private organisations to enter the market
- Competitiveness issues (i.e. platform economics)

IV. **Understand the upcoming trends of on-demand mobility services.** The examination of these trends will include the approach in entering the market and their successes/failures.

V. **Consider the funding and distribution of the benefits and costs associated with the provision of on-demand mobility services.**

SCOPE

Modal scope
There is no universal definition for 'on-demand mobility service'. Hence, for this project 'on-demand mobility services' to be reviewed are as follow:

1. On-demand bus/shuttle;
2. On-demand waterborne;
3. Ride-hailing (4-wheelers, 3-wheelers and 2-wheelers transport, and car-pooling booked via mobile apps);
4. Car sharing and motorbike sharing;
5. Micromobility sharing (e.g. e-scooter, bike sharing);
6. Food and parcel deliveries (this is in the context of how it impacts mobility patterns and urban public transport services).

These services share common features such as:

- Seamless booking and payment through the use of mobile apps.
- Real-time information services e.g. navigation systems, real-time demand/supply information, and smart parking.
- For services 1 and 2, they offer dynamic routing (based on users and demand).
- For services 4 and 5, they are generally available 24/7 and not dependent on 'drivers'/operators.

Geographical scope
The research should have an international scope with a main focus on the Asia-Pacific region.

GETTING INVOLVED

HOW?

UITP AP CTE has called all public transport stakeholders to share about on-demand mobility services in their jurisdictions through an **online survey**, which we **conducted in March 2022.** Survey results would help the Project Team to understand and describe the current landscape of and attitudes to on-demand mobility in cities around the world. The survey is closed now and the results are being analysed.

UITP AP CTE is looking for experts – individuals or organisations – in the field of on-demand mobility services coming from public transport authorities, operators, mobility service providers, academia or consultancies. Contribution can take the form of:

- Contributing to a **city-level case-study** where your organisation has experience or knowledge of the business models, governance structure and/or market of on-demand mobility.
    - Contribution can be done through written or verbal – phone call or in-person - interviews. Interview questions are shared in advance with the organisation.
    - UITP AP CTE is responsible for drafting the case-studies. The study targets to have case-studies from six cities in Asia, one or two cities in Australia-New Zealand cities, and four to five cities from outside the Asia-Pacific region.
    - An example of a use-case[1] related to an application of artificial intelligence in customer service published in one of UITP AP CTE's previous reports is included in the Annex page 5.
- Writing a **blog article** for publication on UITP website and/or in the study's final report to share opinions on on-demand mobility services including successful governance structures, business models and trends in Asian cities and beyond.

WHY?

This is an opportunity to discuss one of today's paramount challenges of the urban mobility sector. Successful integrations of on-demand mobility services into public transport systems will be key to ensure sustainable practices of mobility thrive in cities.

Contributors will benefit from the following:

- Selected case-studies will be featured in the research report and other UITP publications and presentations.
- Participate in selective and exclusive workshop discussions with experts recruited across the world and of various backgrounds.
- Exposure to the global network of UITP.
- Receive formal acknowledgment of contribution in the report. *

*Contributors that only take part in the survey are not included. Survey respondents will however receive the full survey results.

EXPRESSION OF INTEREST AND CONTACT

Interested in taking part in the project? Please contact us:

- Poornima SINGH, Manager for Research and Membership Services, UITP AP CTE (based in UITP CTE office in Singapore): poornima.singh@uitp.org / +65 98526101

We would appreciate if you can express your interest by including:

- Name of your organisation.
- Positions of contributors within your organisation.
- Which activities (proposed above) you would like to participate in.
- Your expertise and knowledge relating to on-demand mobility services.

[1] A use-case refers to a specific application or project usually written thanks to the contribution of a single organisation. A case-study has a wider scope, for example at city-level, and requires the contribution of multiple organisations.

PROJECT BACKGROUND

The continuous changing landscape of new mobility services, especially on-demand services, is posing a considerable challenge to many authorities across the globe. Asian cities are particularly quick in adopting technologies as many cities face the issue of rapid urbanisation. With five Asian cities being in the top 10 of Urban Mobility Readiness Index, UITP AP CTE project will focus on on-demand mobility services and explore how the governance, market investment and infrastructure in the region foster the growth of these services.

The outcomes of the study should give public transport sector insights into the impact of on-demand services on urban mobility landscape and an overview on the difference types of governance approach to these services.

UITP AP CTE is collaborating with the project GECKO funded by the European Union and coordinated by UITP. GECKO *(Governance principles and mEthods enabling deCision maKers to manage and regulate the changing mObility systems)* is a 10-partner consortium project started in December 2018 and expected to complete by May 2021. The aim of the study is to support authorities in developing the most appropriate regulatory framework and governance model, through guidance, recommendations and case studies, for the transition to a new mobility era of cooperative, inclusive, competitive, sustainable and interconnected mobility across all modes, through evidence-based research. While GECKO has a more European focus, UITP AP CTE's study intends to provide an Asia-Pacific perspective to the topic of the governance of on-demand mobility services augmented with an international comparison.

ABOUT UITP ASIA-PACIFIC CENTRE FOR TRANSPORT EXCELLENCE

In 2012, LTA and UITP signed a collaboration agreement to co-operate in the establishment and development of the UITP Asia-Pacific Centre for Transport Excellence (AP CTE), to be located at LTA's premises in Singapore.

Both parties started their joint journey by successfully organising the LTA-UITP Training Programmes and biennial Singapore International Transport Congress and Exhibition (SITCE) events. Few years later, UITP and LTA extended the scope of their activities with bespoke research projects. In exploring opportunities in current challenges in public transport sector, UITP AP CTE is able to play a greater role in contributing to the mission to advocate for public transport and promote sustainable urban mobility in the Asia-Pacific region.

Since January 2018, AP CTE completed two research studies on *Artificial Intelligence in Mass Public Transport* and *Sharing of Data in Public Transport: Governance and Sustainability*.

Annex – Example of a Use-Case published in the *Artificial Intelligence in Mass Public Transport* report

COMMUNICATION ROBOT

Organisation: East Japan Railway Company – JR East (operator)

Annual Ridership: 6.22 billion on JR East network (Japan)[3]

Partner: Hitachi (industry supplier)

Deployed in: Tokyo (Japan)

Project Timeline: 4 years (2016-2020)

Status: Development of machine learning algorithms

Application: Multi-lingual humanoid robot able to provide answers about public transport systems, nearby facilities and sightseeing activities.

Overall Goal: Respond to changes in the business environment with the declining birth rate, aging population and sudden increase in visitors from abroad.

Target Users: Customers

AI technologies: Natural Language Processing (NLP) & Pattern Recognition

Data Input: 216 FAQs and answers based on interviews with travel and commercial facility customer service staff.

Impact on Workforce: Communication robot can reduce the number of queries dealt with by customer service staff in stations.

Challenges

- Selection of a suitable talking humanoid robot.
- NLP technology refinement:
  - Some conversation flows between user and robot were contrary to expectations.
  - The robot needed to be trained to answer questions on topics not included in the database or with a different phrasing.
- Customers expectation to receive information quickly:
  - The robot could not switch language and answer the first question at the same time (2-step process).
  - Users repeated questions during the robot processing time.

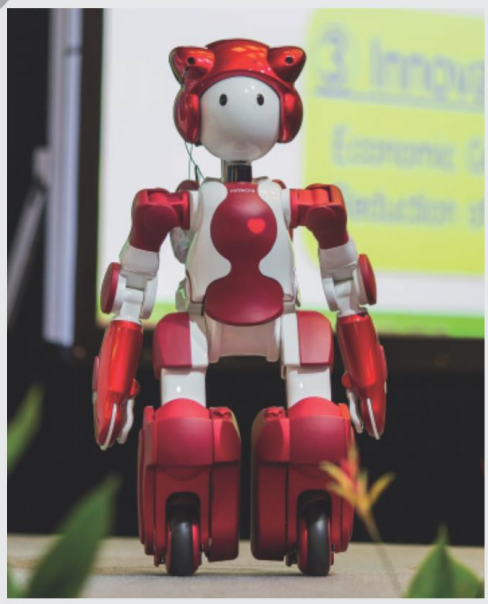
Evaluation: In 2016, results of a technical verification conducted with 634 participants at JR East Travel Service Centre of Tokyo station are:

- Success ratio of question answering: 33%*
- Success ratio of language switching: 60%
- Dialog failure due to noise reduction failure: 1%
- Robot processing time: 3 seconds

**Main reasons for answer failure are poor recognition of question content (36%) and no answer information (22%).*

Lessons learnt: Build extended database to deal with multiple types of queries (transportation, surrounding sightseeing, etc.).

JR East Communication Robot



Source: East Japan Railway Company, Photo Credit: SITCE 2018