Economic Commission for Europe

Inland Transport Committee

Working Party on Transport Trends and Economics

Thirty-third session
Geneva, 7–9 September 2020
Item 2 of the provisional agenda
Workshop on Economic analysis of the transformation
of urban transport systems

Expert Roundtable
Economic Analysis of the Transformation of Urban
Transport Systems

Note by the secretariat

**Expert Roundtable
Economic Analysis of the Transformation of Urban
Transport Systems**

Geneva, 9 September 2020 – 10h00-15h30

Room XXIV, Palais des Nations
in-person & via WebEx

Held in conjunction with the Working Party on Transport Trends and Economics (WP.5)
Programme of work: cluster C. Sustainable urban mobility

I.   INTRODUCTION

Definitions

Urban transport systems are key enablers for the sustainable development of cities, they provide urban dwellers with access to jobs, education, health care or commerce and provide seamless links among the various markets. The more effective and efficient the urban transport system is (i.e. the better it facilitates access to various markets and places of interest and links them effectively), the more opportunities there are for cities and their inhabitants to develop and prosper.

We consider effective and efficient urban transport to be one which satisfies the numerous and diverse requirements of metropolitan mobility by:

- Providing accessibility to various locations at affordable pricing.
- Minimizing travel times between those various locations.
- Internalizing transport system externalities such as air pollutants, noise emissions, road accidents and others with a view to limit negative impacts on citizens well-being and their quality of life and maximizing service quality in a context of "resource constraint" conditions.

Challenges

Organizing an effective and efficient urban transport system is not an easy task as complex systems (such as transport and mobility) tend to interdepend on other systems to be able to operate. These interdependencies require a comprehensive, multi-disciplinary approach among others paying due consideration to: spatial and urban infrastructure planning, social demography and geography as well as urban transit and logistics demands.

In the era of ever-growing urbanization, the creation of efficient and effective urban transport systems is high on the agenda of policymakers globally, whether by applying single transport policies and/or combined/integrated policies.

In this context, it is of utmost importance to understand:

- What are the costs of implementation of single or integrated policies?
- What benefits do they bring (in monetary terms)? and

- What are the risks and how to mitigate them in order to maximize the benefits and minimize costs?

It is also important to consider how the risks, costs and benefits in case of implementation (or lack thereof) of single or integrated policies vary depending on the size of cities, the size of their markets and their level of technological development, i.e. their level of vehicle electrification and automation and the use of Intelligent Transport System (ITS) technologies. In such consideration, the negative consequences generated by transport on public health, quality of life and the environment are to be integrated.

II.   WAY FORWARD

Compiling such **transport policy cost-benefit analyses** in a variety of cities of different sizes could provide a sound empirical basis for the development of an analytical model. Elaboration of such an analytical model to assess suitability of transport and/or combined policies can be an important step forward for cities, empowering them to make better informed decisions in the future for transformation of their urban transport systems. It is at this methodological level that this workshop aims at providing value. The economic analysis should consider the wide range of policies being applied to urban transport systems, which for decades were focused on facilitating travel for personal vehicles powered by a combustion engine. It should build on the experience of many EU Member States with development and implementation of Sustainable Urban Mobility Plans (SUMPs) which serve as multi-stakeholder planning instruments for providing sustainable mobility and reducing car use in urban areas.

Available urban mobility policies *inter alia* include the following categories aimed at:
- Avoiding or reducing travel (i.e. avoid policies)
- Shifting travel to more societally- and environmentally-friendly modes including "active modes" and a shift to mobility as a service (i.e. shift policies)
- Improving the available modes and system (i.e. improve policies)

Each of the above policy categories has been analyzed for cities of different sizes. Also, possible policy mixes should be analyzed and how such mix may need to be adjusted for cities of different sizes. Specific examples of the avoid-shift-improve policies are listed in the annex.

UNECE invites city authorities, urban planners, NGOs and academia to share their analysis and/or research on costs, benefits (in monetary terms) and risk of (non-)implementation of policies to making urban transport system more effective and efficient. The analytical research will be discussed at this workshop hosted by the UNECE Working Party on Transport Trends and Economics (WP.5) on 9 September 2020.

III.   OBJECTIVES OF THE WORKSHOP

The workshop is organized to discuss analysis and research on the costs, benefits and risks of implementation (or lack thereof) of policies aimed at making urban transport system more effective and efficient. The workshop will shed light on how cities conduct a cost (in monetary terms)/ benefit and risk analysis before introducing and implementing new policies aimed at making urban transport systems more sustainable and efficient. If possible, the workshop should conclude on the elaboration of an analytical model empowering urban policy and decision-makers to take better informed decisions for the future. The workshop will bring together city authorities, urban planners, academia and experts engaged in this field.

IV.   PROGRAMME

10h00-10h10 – Welcoming Remarks

- **Mr. Konstantinos Alexopoulos**, Chief, Transport Facilitation and Economics Section, UNECE Sustainable Transport Division

10h10-11h00 – Session I – SETTING THE SCENE – innovative policies aimed at transforming urban transport systems

Keynote speakers:

- **Mrs. Gulnara Roll**, Secretary, Committee on Urban Development, Housing and Land Management, UNECE
- **Mr. Roel Janssens**, Secretary, Working Party on Transport Trends and Economics, UNECE
- **Q&A**

11h00-11h45 – Session II – SHIFT POLICIES – costs and benefits of implementation, fit-for-purpose analysis

- **Mr. Paul Minett MBA**, Research Associate and Principal Investigator, Mineta Transportation Institute*, "Congestion – Clearing Payments to Passengers"* as detailed in a report *(*https://transweb.sjsu.edu/research/1817-Congestion-Clearing-Payments) from San José State University (California) with co-authors John S. Niles, Richard W. Lee PhD, AICP, and Brittany Bogue, with assistance from Dipl.-Ing. Marco D. Schäfer, German Environment Agency.
- **Mr. Angelo Meuleman**, *"Mobility hubs: an innovative approach between digital and physical aspects of Mobility-as-a-Service"*
- **Q&A**

11h45-12h45 – Session III – IMPROVE POLICIES – costs and benefits of implementation, fit-for-purpose analysis

- **Messrs. Pierluigi Coppola, Diego Deponte**, **Fulvio Silvestri, Alessandro Vacca, Federico Messa**: *"Using multi-dimension Cost-Effectiveness Analysis to prioritize urban rail investment: framework and case study in Italy"*
- **Dr. José Veiga Simão, Mrs. Francesca Cellina** and **Dr. Roman Rudel**, University of Applied Sciences and Arts of Southern Switzerland (SUPSI) - Institute for Applied Sustainability to the Built Environment (ISAAC): *"Critical barriers precluding the electrification of road public transport: Locarno case study"*
- **Prof. Dr. Volker Hartkopf**, Founding Director, Center for Building Performance and Diagnostics, School of Architecture, Carnegie Mellon University: *"Inter-linkages between urban construction and urban mobility in sustainable cities"*
- **Q&A**

12h45-14h00 – Lunch break

14h00-15h00 – Session IV – COMBINED POLICIES – what is the right policy mix, fit-for-purpose analysis

- **Mr. Pavel Chistyakov**, Vice President, Infrastructure Economics Centre (IEC) on *"Digital solutions for mass transit quality assessment. Policy mix and case studies for Russian cities"*
- **Mr. Anton Belogreben**, Head, Research Department of Transport Economics of the OJSC Scientific and Research Institute of Motor Transport "NIIAT" on *"Efficiency assessment of urban transport systems secure development"*
- **Mr. Manohar Velpuri**, *"Economic Analysis of the Transformation of Urban Transport Systems to connect Rural areas"*

15h00-15h30 – Conclusions and next steps

- UNECE secretariat
- Tour-de-Table

15h30 – End of workshop

ANNEX

Examples of the "avoid-shift-improve" policies

Avoid policies:

- Prevention of urban sprawl by establishment of requirements on settlement density (single vs multistory buildings) in connection with transport requirements
- Support to affordable housing in city centres
- Implementation of mixed land use concepts, to enable, as far as feasible, that urban dwellers have access to jobs, education, healthcare and commerce in their vicinity thereby avoiding needless movements
- Creation of urban public spaces, calm and recreational areas in all districts,
- Establishment of agencies for integrated urban planning
- Assessing the scope and impact of tele-working and/or flexible working hours (permitting the nature of work performed) on urban mobility. E.g. avoiding forced mobility at rush hours
- Facilitating residential mobility (generally referred to as local or intra-metropolitan moves) in function of daily requirements in order to avoid regular, long intra-metropolitan commutes.

Shift policies:

- Creation of secure and comfortable bike and walk paths to connect residential areas with urban mass transit
- Creation of bike and walk paths at the expense of vehicular traffic
- Creation of bus lanes and tramway-reserved tracks at the expense of vehicular traffic
- Promotion of active mobility (walking and cycling) with the citizens
- Improvement and/or maintenance of high-quality and affordable urban public transport,
- Implementation of MaaS and engagement of city authorities in MaaS schemes
- Optimization of modal shift/inter-modality and improvement at transfer nodes
- Support transparency in sharing transport data
- Support to and incentives for various shared transport services
- Improvement to accessibility to and affordability of urban public transport
- Discouragement and disincentives for use of personal vehicles in trips to city centres including limiting parking, toll parking and street usage
- Creation of charging infrastructure for electric vehicles

Improve policies:

- Creation, implementation and monitoring of local public transport service standards for maximum distance to the transit stop, maximum load per square meter in a vehicle, reliability of service and other parameters.
- Improvement of traffic conditions and reduction of urban road congestion
- Support to electrification of vehicle fleet, including for urban freight transport
- Support to digitalization of the urban transport system
- Support to renewal of vehicle fleet to less polluting fleet
- Support to increased monitoring of vehicle conformity with emission limits
- Improvement to road traffic management including through automation, telematics and the use of other ITS technologies
- Improvement to public transport tariffs with priority of long-term unlimited ride tickets

- Prohibition of transfer charging on city public transport (making all transfers free of charge)
- Implementation of sanitary measures to make public transport safer for public health
- Implementation of effective instruments to financing public transport

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