

Top-down and bottom-up transit information? Evolutions of transit real-time information policies in two urban contexts through travelers' experience

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No urban transit system is perfect: buses may be late or deleted; one has to get a precise idea of transit schedule to travel early in the morning or late in the evening; if it works well for one mode, it may not for another. However, integrated transit systems turn out to have significant comparative advantages in terms of social demand, environmental costs and sustainable planning.

In a context of global crisis, transit investment and operation costs turn out to be challenging for governments and local authorities experiencing credit restrictions and cuts in budgets. In various cities, recent developments of real-time information systems aim to reduce passengers' uncertainty and provide more reliability to the existing transit systems (Watkins et al. 2011; Dell'olio et al. 2011; Rizos 2010). Hence, real-time information systems are generally considered as a service provided by public authorities to promote multimodality and modal shift. Real-time information can be conveyed through a number of different tools, including multimodal panels or kiosks located in transit stations, websites and mobile applications. We also consider the case of cities where poor and segmented information about the transit service is provided by operators to travelers. In these cities, information often reflects the quality of service, which suffers major organizational, technical and financial setbacks and shortages. The majority of transit travelers can be considered as captive of the transit system because they cannot afford to commute by car. But walking and using shared vehicles (taxis, motorbikes, rickshaws...) are also common alternatives to transit (Godard 2005) and contribute to generate a kind of intermodal mobility (Diaz Olvera

et al. 2012). In this context, real-time information is often shared between travelers during their trips and through social networks.

Therefore, we propose the concept of top-down and bottom-up information to describe the current diversification of information sources about transit service. This diversification mainly relies on digital technologies, which opened the way through open data policies and enlarged opportunities to share information between travelers.

We pinpoint three main kinds of real-time information sharing systems: institutional information, travelers' information, and an intermediate kind, relying both on public data and travelers' data collection. The first range is composed of local applications launched either by the local/metropolitan authority or by an integrated urban transit network operator. They give access to information on schedule, route-planning, and service disruptions. More and more, integrated multimodal information systems are set by public authorities in order to promote modal shift (Kenyon and Lyons 2003). A second range of information sharing system is set up by travelers. Travelers mainly use existing and no specific social networks to broadcast information or to share it with others. Finally, we highlight the emergence of collaborative applications, created either by local independent developers or by transnational start-ups and companies. Contrarily to the two preceding ones which fit a specific area, this kind of applications is progressively introduced in several cities in the world.

This diversification of information sources and sharing processes conveys different conceptions of the city in terms of scale and governance. Indeed, each kind of application seems to target different groups of users, and specific spaces and scales: are cities urban marketing products to attract investors, local territories paced by day-to-day commuters, landmarks of a global network for world travelers?

In this communication, we propose to outline the first results of a research on travelers information in transit systems in Lyon (France) and Rabat (Morocco), focusing on the profile of the users and non-users of each range of real-time information applications.

The question of social and spatial inequalities will be raised out in terms of needs, access and use of the different kinds of applications. In a planning perspective,

we will assess to what extent digital technologies can help people to better plan their trips in a context of scarcity of public information, low-quality transit service, or institutional boundaries.

From a governance point of view, the evolution of real-time information delivery draws an emerging shift between transit management and operation and information provision roles. The current competition between public and private applications suggests the gradual emergence of a transit information market. Our first results concerning travelers needs and preferences may help defining a real-time information economic model (requirements, costs sharing...) in a social justice perspective.

References

Dell'olio, Luigi, Angel Ibeas, Patricia Cecin, and Francesco Dell'olio 2011 Willingness to Pay for Improving Service Quality in a Multimodal Area. *Transportation Research. Part C, Emerging Technologies* 19(6): 1060–1070.

Diaz Olvera, Lourdes, Assogba Guézéré, Didier Plat, and Pascal Pochet 2012 Choosing or Bearing Intermodality in Sub-Saharan African Cities. In . Addis Abeba. <http://www.codatu.org/wp-content/uploads/L.Diaz-Olvera-A.-Guezere-D.-Plat-D.Pochet-ARTICLE-Codatu-XV-2012-FR.pdf>, accessed October 6, 2015.

Godard, Xavier 2005 Kyoto Ou La Double Trappe Du Transport Institutionnel. *Recherche Transports Sécurité*(88): 225–242.

Kenyon, Susan, and Glenn Lyons 2003 The Value of Integrated Multimodal Traveller Information and Its Potential Contribution to Modal Change. *Transportation Research Part F: Traffic Psychology and Behaviour* 6(1): 1–21.

Rizos, Anthony Charles 2010 Implementation of Advanced Transit Traveler Information Systems in the United States and Canada: Practice and Prospects. Massachusetts Institute of Technology. <http://dspace.mit.edu/handle/1721.1/59766>, accessed May 26, 2015.

Watkins, Kari Edison, Brian Ferris, Alan Borning, G. Scott Rutherford, and David Layton 2011 Where Is My Bus? Impact of Mobile Real-Time Information on the



Perceived and Actual Wait Time of Transit Riders. Transportation Research Part A: Policy and Practice 45(8): 839–848.