

The results of TRISTAM

New forms of information and communication technologies (ICTs) will influence the way individuals organize their activities in time and space. Individuals' daily activity-travel pattern depends on their past experiences and the received information about spatial and travel environment. In fact, advanced information services introduce new choice alternatives to the individuals and allow them to make better decisions in provision of information. Moreover, provision of information or mostly recommendation may change individuals' routine activity-travel pattern, which may trigger changes in spatial demands. Little is known about the dynamics of these changes.

The research program resulted in several models to examine and/or simulate the effects of the next generation advanced ICT on dynamic activity-travel patterns. These models predict any shifts in the timing and especially location of activities and travel (route choice) in response to information provision and new forms of ICT and the impact that may have on the location patterns and performance of urban and transportation facilities, and indicators of urban well-being, equity and equality. In addition, the extensive literature reviews have resulted in general knowledge of the topic area. Thirdly, much progress has been made in developing new technology for collecting the data required for estimating these models. An advanced innovative web-based questionnaire is designed and developed. Experience has been gained with the use of GPS for longer periods of data collection.

ICT is being increasingly recognized as a (potential) measure to help improving accessibility. To achieve this goal, the necessary generic model for measuring the effects of ICT on accessibility has been formulated. It is found that travelers' preference for and use of travel information and telecommunication-facilities are often interrelated. While travelers' preference for and use of travel information and telecommunication-facilities could be determined by different factors, common underlying factors jointly affect travelers' preferences and ICT-usage. In particular, we identify potential synergy effects between the provision of travel information and teleactivities (such as teleworking and teleshopping). – that is, the benefits of travel information on accessibility improvement could be enhanced by the availability of teleactivities in situations such as when travelers acquires travel information for the congestion level on routes and decide whether to telework to avoid congestion based on the information, or vice versa – the benefits of teleactivities on accessibility improvement may be enhanced by the availability of travel information as well.

Results have also been obtained with regard to the question how information technologies in transport could benefit both drivers and the society. We distinguished two type of technologies – the ones that compliment travel, like real-life traffic information to drivers and the ones that substitute travel, for example, Internet technologies that enable employees to work from home instead of office. We showed that morning working from home before commuting to a workplace might not be beneficial for society in general, even if technologies that enable this are free. In a study on the economic effects of traffic information we consider the market for traffic information in which a road network manager, a supplier of traffic information and individual motorists try to maximise their personal benefit. We found that the provision of traffic information by a private monopolist results in a minor to negligible loss of prosperity. Consequently, it seems that the nature of the party that provides the traffic information, either a profit-maximising or a prosperity-maximising organisation, is of no importance. We also researched a more broad question on how morning traffic jam and commuting costs associated with it affect where people live in a city. We showed that introduction of time-varying congestion pricing causes a city to expand in geographical size.