In order to foster social development while respecting the environment, urban passenger transportation authorities have turned their attention to the optimization of the timetable of the operated routes.

The Department of Genetics, Microbiology and Statistics of the UB, in collaboration with the Catalan company Transports Metropolitans de Barcelona (TMB) and the Canadian company GIRO, has developed and implemented a new timetable planning model aimed at improving the punctuality of urban passenger transportation by bus. The new model allows to establish with a higher precision the passage time on each bus stop for every route and a better adjustment of operational costs.

This research entails an innovative approach for public transportation timetabling. On the basis of the experience gained by TMB, the new model automatically rules out atypical passage times, obtains homogeneous time slots, adjusts passage time by means of microsimulations and identifies the causes of the lack of punctuality.

Currently, the transportation companies of major cities throughout the world, such as New York, Los Angeles, Singapore, Chicago, Sidney, Montreal, Athens, Dubai, Seattle, Stockholm, Vienna, Barcelona, Hamburg, Brisbane, Brussels, Oslo, Cologne or Genoa, among others, are using this management model.