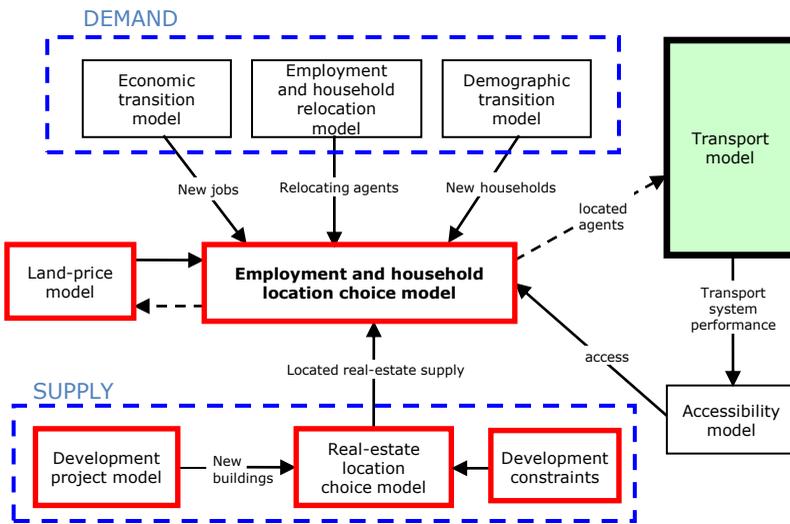




¹ Transport and Mobility Laboratory (TRANSP-OR)

Motivation

Increasing concerns about sustainable development and the growth of urban areas have brought forth in recent years a renewed enthusiasm and need for the use of quantitative land use models in the field of transportation and spatial planning. Microsimulation models allow to predict the growth of cities and to measure the effects of urban policies in a disaggregated manner, therefore accounting for complex behavior of individual agents and delivering more insightful results.



UrbanSim

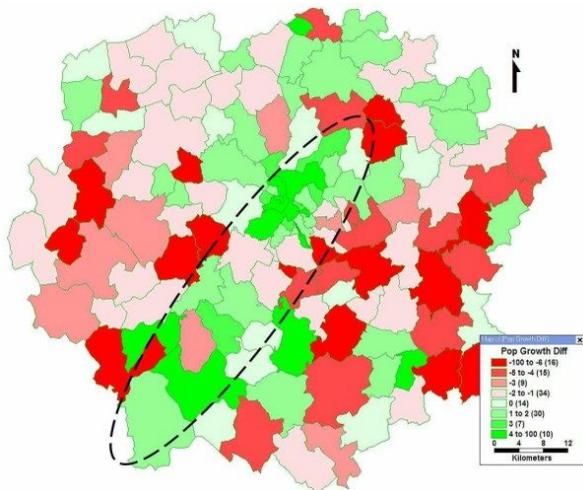
UrbanSim is an open-source urban microsimulation platform. It features:

- Individual representation of the agents in the urban system (households, firms, real estate developers, regulation agencies, etc.)
- A flexible sub-model structure that can be modified in order to adapt the simulation to different cities or to model new phenomena

Objectives

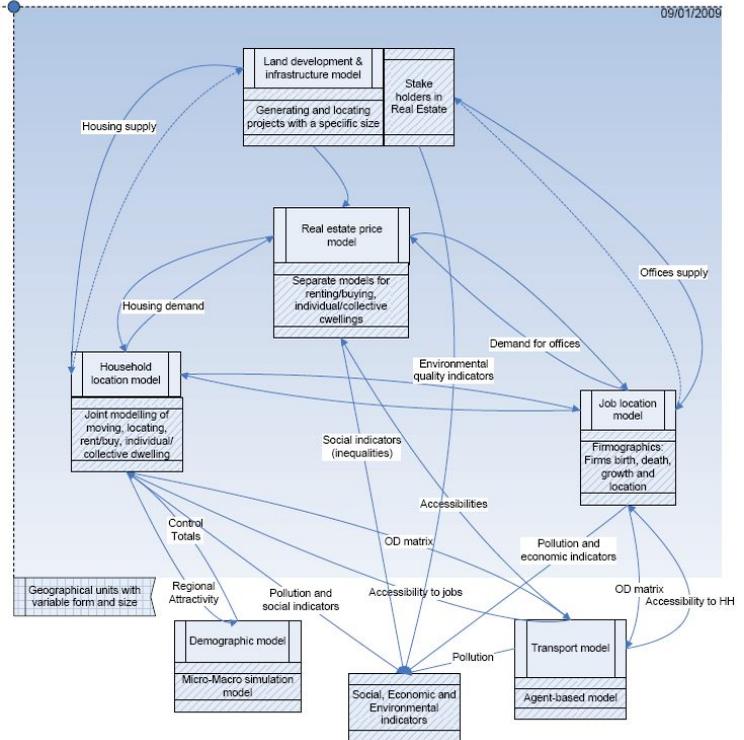
UrbanSim has proved to be a very powerful and efficient tool in the context of American cities. However, various recent projects conducted in Europe point to the need to adapt the available modeling platform to European cities. This project develops a new, improved modeling platform (UrbanSimE), featuring:

- Improved sub-model specification and estimation, accounting explicitly for the characteristics and particular dynamics of European cities
- An integrated daily travel behavior simulator
- A sustainability and environmental module (for policy evaluation)
- A demographic micro-simulation model to predict the creation, migration and disappearance of individual households
- Explicit modeling of the collective decision process within households
- Explicit modeling of developers and stakeholders in the real estate market.



Predicted population growth by zone, 2000-2010, Brussels region

UrbanSimE



Case studies

The new features and models of the new platform will be analyzed, tested and validated for three case studies in Europe (Brussels, Paris and Zurich). The tests consider evaluating environmental policy scenarios, in order to account for the trade off between economic development and environmental sustainability.

More information:

- <http://www.sustaincity.org>
- <http://transp-or.epfl.ch>
- <http://www.urbansim.org>

