

# New trends and challenges in urban operational modelling

Rabino G.A.<sup>1</sup>

<sup>1</sup> Di.A.P. - Dipartimento di Architettura e Pianificazione,  
Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133, Milano (Italie)  
*giovanni.rabino@polimi.it*

## Abstract

Forty years from “gold age” of urban modelling there are evident signs about a great return of the “large scale urban model” (LSUM).

People who paid attention to the return of the LSUM explain this phenomenon with decrease of the “seven sins” of the modelling, reported in the famous “Requiem for the large scale urban model” of Lee, 1973.

Among these, particularly “capital”, are the sins of “hunger of data”, “cost”, “complication”. Today the development of databases, the progress and the diffusion of the calculation tools, the greater “confidence” (of the whole population) with computer science, and its products, seem to remove these strong constrains.

The topic we want to speak about is if the return of the LSUM is a “relevant” aspect, from scientific point of view and for planning and management of the territory (an age of “renaissance”); otherwise it’s only a “revival”, that is possible for technological progress, and, maybe, for a “recourse” of planning (in the cycle of its courses and recourses).

If revival is certain, renaissance is probable, or - at least - possible, but urban modelling has to exercise (seven) virtue, facing - and finding the manner to handle - the changes between ‘60s and nowadays.

## 1) The change of the urban phenomena

The “new LSUM”, continue in wide measure to reproduce the Fordist city of the half of the past century. It’s necessary to be confronted with the multidimensional variety of the new millennium cities, definable across 7 ideal-types : the flexible city ; the global city; the non- city; the plural city ; the insecure city ; the virtual city ; the ecological city.

## 2) The change in the urban theories

To study the new cities is absolutely necessary a new theoretical foundation, inserted in the paradigm of the complexity. This re-foundation can be organised around three key words (strongly correlated among them) :

- a) cognitive : a “new urban geography” has to consider that the cities derive (maybe, or mostly) from “human culture”. A cognitive approach (careful to the aspects of knowledge and intentionality of the human action) is indispensable ;
- b) synergetic : the experience of “dynamic urban models” (from models of the ‘70s, to more recent ones), the experience with high conceptual and scientific value but without practical impact, must be recovers for operativity in the development of the new LSUM ;

c) qualitative : the “subjective feeling” (the qualitative characters, the “qualia”) is an aspect (maybe, a large part of the aspects) of the complexity of the anthropic systems to which we are addressing an increasing attention. The treatment of this dimension of the urban complexity doesn’t be neglected.

## 3) The change in the planning theories and experiences

The models must be designed in conformity to the scope (in our case, for planning) for which they are built. Will be accounted that, from hierarchical top-down, rational-comprehensive plan, of the ‘60s, the theoretical positions have been enriched and diversified : in the problem view ; in the “role” of the planner ; in goals of planning activities.

## 4) The change in the style of modelling

The modelling activity has been object of redefinition and reflection. The process of “model building” has been explored. The cognitive-communicative valence of the models has been analysed. Finally the modelling activity has been “contextualised” regarding its socio-cultural frame. The new LSUM will have to be confronted with all that.

## 5) The change in the models

One great amount of new (and old) modelling methods it is already to the attention of the modelist (i.e. : C.A., N.N., M.A.S., G.A., B.N....). The necessity is to pass from a still widely accidental use (that is dictated by pleasure and mode) to a “reasoned” use based on the finalization of the model to its scope.

## 6) The change in the technical aspect of modelling

The “model design” recalls all that technical and auxiliary computerized tools and all those operating procedures needed for development and application of a model. For user-friendly LSUM, with limited costs and communicatively efficacious, it is necessary “to engineer” these operations, through integration with automatic data acquisition, with other models and re-presentation (visualisation) techniques.

## 7) The supreme challenge

But the true and deeper challenge for a Renaissance of the LSUM is above all about the capability of the modelists to assume, in their work, a new mental attitude, able not only to consider all the explained aspects, but also to really marry the scientific and humanistic culture.