Managing urban data through a web-based platform: The newer Interactive Visualisation Tool (InViTo)

MANAGING URBAN DATA THROUGH A WEB-BASED PLATFORM

THE NEWER INTERACTIVE VISUALISATION TOOL (INVITO)

Elena MASALA

SiTI - Higher Institute on Territorial Systems for Innovation, Torino, Italy

Stefano PENSA

SiTI - Higher Institute on Territorial Systems for Innovation, Torino, Italy

SESSION *VISUALISATION* #1

In the wide context of tools designed to support spatial planning and decision making, also known as Planning Support System (PSS) and Spatial Decision Support Systems (SDSS), a field of scientific research is focusing on geovisualization as methodology for dealing with both spatial problems and multitude of actors and issues [1, 2, 3, 4, 5, 6, 7]. In fact, geovisualization focuses on exploring geographic information by means of interactive tools in order to exploit the intuitive skills of users for sharing information in participated sessions, thus establishing the interaction with spatial data as the most fruitful method for building knowledge among groups of expert people [8, 9, 10, 11].

In this research field, the paper illustrates the use and its newer developments of the Interactive Visualisation Tool (InViTo), a visual methodology to analyse, manage and evaluate data related to territorial issues [12, 13, 14, 15]. InViTo was conceived as a platform for structuring spatial problems on the basis of Geographic Information Systems (GIS) with spatial and non-spatial attributes in order to visually describe positive and negative effects on territory of key selected elements.

The first version of InViTo was based on the parametrical and generative features of 3D modelling by the use of McNeel's Rhinoceros and its free plug-in Grasshopper. The resulting tool showed to be very flexible in being applied to a number of case studies across Europe, which presented various purposes such strategy assessment [12, 16, 17], urban modelling [13, 15, 18, 19] or public transport accessibility [20] and at different scales, from the urban to the trans-national one. Nevertheless, a series of problems remained to be solved, in particular those referring to the necessity to use Rhinoceros as main interface for communicating with the actors involved in spatial decision and planning processes. For this reason, a newer version of InViTo has been designed and is currently under development.

The recent upgrade of InViTo is web-based and focuses on the use of free and open technologies such as Google Maps and Google Fusion Tables. This can ensure, on the one hand, a full accessibility for end users, who often already know Google environment and have no problems in exploring data displayed by means of the Google viewer. On the other, it allows developers to easily improve and update the contents also by means of a fruitful collaboration among a global community, which constantly produces information with open access.

The paper will describe the progress of the migration of InViTo towards a web platform which could allow users to create their own analysis, modelling or assessment tool for their specific case studies. The tool is conceived as a visual method for disseminating knowledge on the dynamics of territorial systems, which could be reproduced to visualise the possible effects of specific planning choices directly on territory.

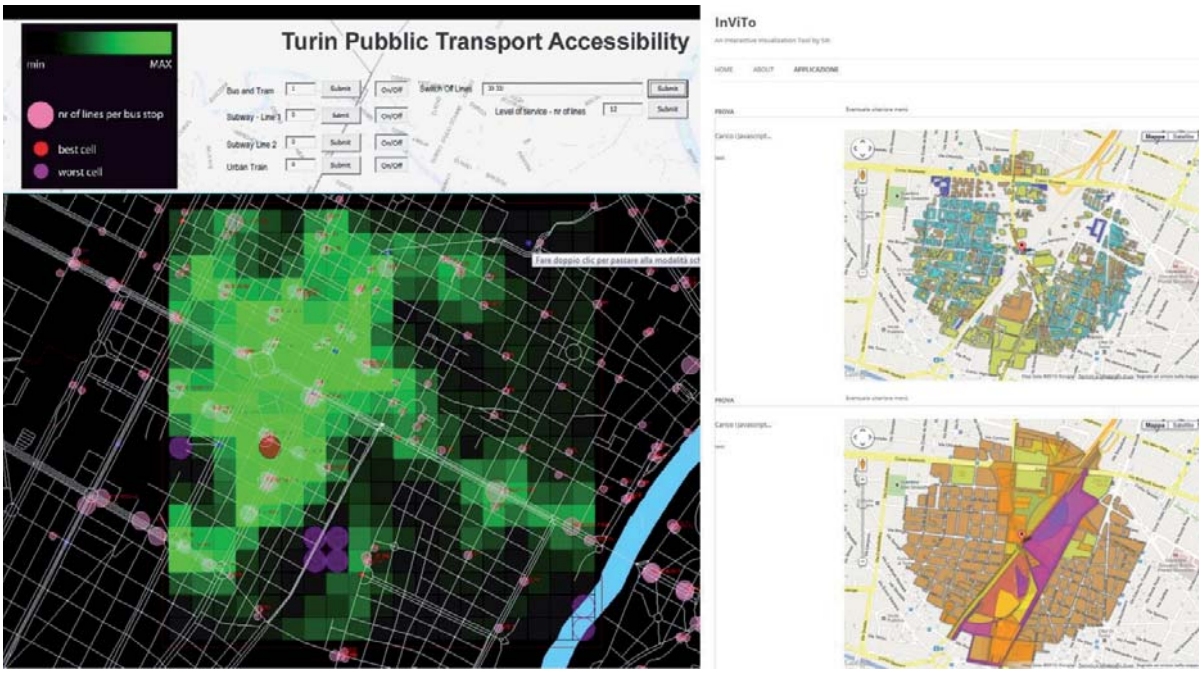

Figure 1. On the left, an application of the old version of InViTo for the evaluation of the accessibility to the public transport facilities: the platform is based on Rhinoceros improved with a customized Visual Basic interface. On the right, the first development of the web-based platform with the visualization of some specific attributes from a urban database, with respect to the buildings on the top-right, and with respect to the parcels on the bottom-right.

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KEYWORDS

Geovisualisation, Interaction, Spatial Decision Support Systems, PSS, Google.

Notes