

# Virtual Built Realities

## The Case of Geographical Research Induced knowledge

**António M. RODRIGUES**

**Bruno NEVES**

**Teresa SANTOS**

e-GEO – Centro de Estudos de Geografia e Planeamento Regional

Faculdade de Ciências Sociais e Humanas

Universidade Nova de Lisboa

Av. de Berna 26

1069 – 061 Lisboa, Portugal

(+351) 21 790 83 00, amrodrigues@fcs.unl.pt

**Keywords:** Spatial cognition, WebGIS, Web 2.0

The widespread availability of virtual models of the Earth made available online (e.g. Google Earth, Bing Maps) opens a wide-range of possibilities in terms of making geographical information available to the general public. In Geography-related research groups, a large amount of information is created which, most of the times, does not become public; this hampers potential uses and applications. In fact, the nonexistence of efficient modes of information diffusion creates entropy or even definite obstacles in the production chain which starts with a new idea and should result in an end-product (in the case of applied research).

This article demonstrates the production of an instrument for the diffusion of geographical information over the World Wide Web. The authors, using only freeware, implement a tool which permits any end-user free access to what may be described as new geographies, made of layers which are superimposed on terrain information. Potentially, this type of information have a great impact as it can help shape the cognitive processes behind the way individual interpret and capture spatial information.

### Introduction and Methodology

The visualization of spatial data through the use of virtual globes affects perception about environments familiar to the user [1]. The quality of the data and the level of interaction allows the exploration of realities previously unknown. Moreover, it may be argued that the widespread use of these tools changes cognition processes and mental maps which are themselves an end-product of these processes.

The phenomena of virtual worlds falls within the concept of what is known as Web 2.0 [2]. Users don't simply access information but they become producers of information. Interactive platforms allow the upload of new geographical data, which may easily be made available to others. These *neogeographers* [3] are not a geographer in the traditional sense; they do not need to know anything about Geographic Information Systems (GIS) or geodesic models of the Earth. They can

simply use a virtual world to include new geographical records, new data, and in this loose fashion, create new geographies. This description falls exactly within the realm of Web 2.0. The Web is no longer uni-directional; there are potentially six billion sensors or producers of geographic information [2] and [4].

Geographical information Science (GIS), combined with Web tools allow the creation and diffusion of new geographies. WebGIS are today a preferential tool which allows researchers from the Earth and Social Sciences to show the information they produce. Using publicly available Application Programming Interfaces (APIs), the task of building 3<sup>rd</sup> party applications where geo-referenced data may be superimposed becomes an attractive way of easily disseminating information. This article describes the preparation and development of a WebGIS produced for the dissemination of geographical information produced by researchers from e-GEO – Research Centre for Geography and Regional Planning. It is intended as an open platform with little restrictions in relation to its content. However, clear standards are created in order to guarantee quality. Moreover, it is planned that the platform functions also as a means to generate a strong degree of interaction with the general public, allowing any user to comment, upgrade and even upload new information.

## References

- [1] **Sheppard, S and Cizek, P.** (2009); The ethics of Google Earth: Crossing thresholds from spatial data to landscape visualisation (*Journal of Environmental Management*, 90 - 2102–2117)
- [2] **Goodchild, M. F. (2011);** Citizens as Voluntary Sensors: Spatial Data Infrastructure in the World of Web 2.0 (*International Journal of Spatial Data Infrastructures Research*, 2007, Vol. 2, 24-32)
- [3] **Turner, A** (2006); *Introduction to Neogeography* (O'Reilley)
- [4] **Scharl, A. and Tochtermann, K.** editors, (2007); *The Geospatial Web: How Geobrowsers, Social Software and the Web 2.0 are Shaping the Network Society*. London: Springer