Other Conference Item

Constructing a transport hGIS
Does infrastructure follow infrastructure?

Author(s):
Fuhrer, Raphaël

Publication Date:
2017-04-13

Permanent Link:
https://doi.org/10.3929/ethz-b-000201838

Rights / License:
In Copyright - Non-Commercial Use Permitted

This page was generated automatically upon download from the ETH Zurich Research Collection. For more information please consult the Terms of use.
Abstract "Constructing a Transport hGIS: Does Infrastructure Follow Infrastructure?"

The purpose of this contribution is to present the advancement in the construction of a historical geographic information system (hGIS) on Western Europe’s transport system from 1500 to 2000, as introduced at the T2M conference last year. Emphasis is laid on two points: First, the need for special techniques in the processing of scanned paper transport maps drawn in black-and-white, which are the bulk of historical maps. Second, despite the many real and utopian revolutions in transport history, it is claimed that the spatial position of transport infrastructure over centuries has remained very constant. Using the hGIS this claim can be addressed.

The context of this paper is research on the idea that transport infrastructure played a vital role in the development of spatial economies and finally in the evolvement of national states in Europe. Thus, Europe’s historical transport networks are reconstructed in a hGIS. This spatial information in conjunction with historical sources on transport means allow for estimations of historical travel times and thereof accessibility calculations and spatial analyses.

While we have developed a solution to process colourful map scans, there is no solution to monochrome maps. In such maps, all features – roads, rivers, coast lines or mountain contours are all mapped in black. Possible solutions to this problem are assessed and their integration of the general work-flow is discussed.

The second main topic in this paper is the question whether new transport infrastructure followed old infrastructure. The position of transport infrastructure has a substantial influence on space. Access to a waterway or a proper road for example influenced a city in terms of population and economic growth. There have been several transport revolutions on the side of transport means (horse, coach, steam engine etc.) and on the side of infrastructure (geometric surveys, building methods, capacity, new infrastructure types etc.). However, many researchers claim that the basic shape of Europe’s primary transport network remained unchanged during these centuries. This implies that there have always been the same regions that have benefitted from transport innovations.

The paper will include: i) An overview on the collected materials (mainly maps, and others) and their transformation into a hGIS; ii) discuss solutions to monochrome maps; iii) discuss the question whether transport infrastructure follows infrastructure.

Biography: Raphaël Fuhrer (30; MSc) is a PhD student at ETH Zürich - Swiss Federal Institute of Technology. He has been researching in the interaction of transport and its effects in space, mainly on society, economy and environment. In his PhD thesis, he examines the role of transport supply in the evolvement of spatial economies and national states in Western Europe between 1500 and today.