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Research project and overarching question:

My research is part (PhD2) of an integrated NWO-WOTRO Program investigating the use of spatial information infrastructure by governance networks to tackle urban deprivations in Indian cities.

The research question to be addressed through PhD2's study is how local SII can be socially embedded, institutionalized and scaled-up. In my research proposal I suggest to address this question through the study of the relationship between institutions (as practices) and spatial information infrastructure (as spatial information flows, i.e. creation, sharing, and use of spatial information).

Case Study:

The site in India is a southern city with a population of ca. 850,000 known for its architecture and historical buildings. The city is currently experiencing rapid urbanization facing related problems, especially in terms of physical infrastructure. It is also one of the cities in India that is funded under a national urban renewal mission for 2007 through 2012. However, the "case" is not limited to Mysore. As described below we seek to account for the spatially unbounded nature of this information infrastructure, the development of which includes activities and actors in India as well as Europe.

Theoretical conceptualization of SII:

We conceptualize information infrastructure (II) along the lines of Hanseth, Lyytinen, and Monteiro's information infrastructure theory (Hanseth, Lyytinen, 2004; Hanseth, Monteiro, 1998). These authors define an information infrastructure as an evolving enabling, shared, and heterogeneous installed base. The concept of "installed base" implies that infrastructures always already exist in one form or another, and that the existing elements of an infrastructure influence future development. Various technical and non-technical elements of an installed base "evolve continuously and unexpectedly in that their boundaries are not fixed beforehand," and the II's "services and associated components will expand (or sometimes shrink) in time and space in an organic manner" (Hanseth, Lyytinen, 2004, p. 214). The elements of an information infrastructure are heterogeneous in terms of technological components, humans, organizations, and institutions, as well as sub-infrastructures linked together via gateways (Hanseth, Monteiro, 1998). In this sense, information infrastructures are continuously evolving socio-technical networks.

However, recognizing that many processes of such a socio-technical network are hidden and cannot be charted with lines and boxes (Longhorn, 2008) we also emphasize Star and Ruhleder's property of an installed base as "something that is 'sunk' into, inside of, other structures, social arrangements and technologies" (1996, 113), because infrastructure is closely tied to organized practices, and in fact is part of human organization (Star, 2002). This characteristic makes information infrastructure difficult to see and study, a problem we will illustrate in the following section.

In addition, our research design needs to account for the problem that development of II in this program involves globally dispersed actors and their activities. It resembles more what Engeström (2006) calls a mycorrhizae-like form, i.e. forms of organization that do not eliminate visible and bounded activity systems, but that form the underlying horizontal and invisible base potentially stretching far beyond local contexts.

Research approach and methods:

We propose to approach this study through the tracing of action nets through an unbounded ethnography. The main aim of an action net approach is to show how actions are connected. According to this view actors are created through the actions they take (Lindberg, Czarniawska, 2006). This approach allows us to observe how actions and the

connections between them emerge based on what is being done. In order to unearth the hidden, sunk properties of information infrastructure we conduct a spatially unbounded ethnography of practices of those, who become involved in the program, and the flows of information that are (explicitly or implicitly) interwoven into these practices.

The concrete methods in upcoming research activities are the following: participant observation for the study of practices, actor and artifact shadowing to trace information flows, different forms of conversation and interviews, document collection and analysis, and quantitative surveys. Data for an unbounded ethnography includes research program internal documentation and output.

At the moment, we focus on gaining access to the (Indian local) field and establishing cooperation with various governance actors in the Indian city. For empirical entry point to the study of practices and information flows in the Indian city we study the existing processes involved in the identification of slum areas and provision of services to these areas, especially water and sanitation as these are pressing local concerns.

The research design is flexible and open to allow us to follow actors and actions that promise rich insights into the emerging SII.

Sources Cited:

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