

**PARTICIPATORY GEOGRAPHIC INFORMATION SYSTEMS  
AND LAND PLANNING**

***LIFE EXPERIENCES FOR PEOPLE EMPOWERMENT  
AND COMMUNITY TRANSFORMATION***

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## **2.6. Voluntary Information and PGIS (VI & PGIS)**

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This chapter discusses the role of geographic IT (geoIT) and virtual globes (e.g. Google Earth) at the interface of public policy and citizens. GeoIT can potentially give citizens power -traditionally held by the government- to participate in all spheres of policy making by allowing them to produce and share geoinformation, therefore organize accordingly. Moving away from the traditional conception of bureaucracy which acts as a filter between policy makers and citizens by transforming their requirements into formal procedures, we outline an emerging framework where geoIT act as mediators between policy-makers and citizens. We show that the emerging framework holds the potential of allowing citizens concerned, in our case, about the quality of water services, to influence policy makers directly. The virtual globe acts as a mirror to the traditional eGovernment framework and lends a different societal visibility both to public services provision, and to localized citizens' needs.

Here, we focus on the role of geoIT and virtual globe technology in improving citizen participation in problem acknowledgement and agenda setting. To do that, we discuss the extent to which virtual globes can expand the limited focus of eGovernment, based on preliminary findings and insights from our own research in two empirical cases.

### **2.6.1. Introduction**

Electronic government (eGovernment) research has focused mainly on individual government organizations and on the impacts of information and communication-technology (IT) on the capabilities of single government units (Danzinger et al.,2002). Zouridis and Thaens [2] argue that the four spheres of traditional government - policy, politics, organization, and citizens - have been affected only partly by IT. In the policy sphere, eGovernment concentrates mainly on policy implementation, not on agenda setting and policy development. In the citizens' sphere, eGovernment is mostly concerned with citizens as passive consumers of services.

eGovernment has been studied in the North, mainly. In the South, research about that is scarce, and the situation of such efforts is uncertain. Heeks (2001) estimates that eGovernment projects are 35% total failures, 50% partial failures and 15% successes. He attributes failure to the gap between hard rational design and soft political realities caused

by the three-way association of IT, Universalist modernization and Western rationalism. His argument resembles Avgerou (2002), who claims that different rationalities coexisting within and around IT projects are a major issue for their understanding and actual development.

eGovernment initiatives in industrialized and developing countries hold the promise of a more citizen-centric government with reduced operational cost (Saxena, 2005). Grievance (redressal) systems are a particular type of citizen-initiated contacts within eGovernment (Ranganathan, 2008; Martínez et al., 2009). They are defined as “an expression of dissatisfaction [...] about [...] action or lack of action or about the standard of a service”, as suggested by the British Local government Ombudsman (Hance, 2002). Generally, eGrievance systems are viewed positively (Ranganathan, 2008), in particular their potential to increase openness and transparency within the public administration (Wallack et al., 2007). Citizens can formally submit grievances through a complaint handling mechanism that offers several access points. The eGrievance system allows the formal filing of complaints and captures from the bottom the grievances of the citizens. However, when it comes to specify the sort of grievance, the citizen is limited to a top-down pre-defined list of possible categories or to the interpretation of the phone operator who finally codifies the complaint. In principle citizens are able to trace the complaint.

### ***2.6.2. Virtual globes and volunteered geographic information (VGI)***

Virtual globes are places where citizens and private sector gather to provide and acquire geo-located knowledge, experiences and information about services. The specific nature of information provided on virtual globes is the spatial information attached to all available data.

Significant visibility gains may accrue to citizens and policy makers alike if they can collectively “visualize” places identified as problem areas—places signalled and tagged by citizens’ grievance reports or places where complaints are acknowledged. Locating and visualizing these places requires geographic IT (geoIT) to be integrated into the eGovernment system.

Since the launch in June 2005 of Google Earth (GE), citizens stand a realistic chance to influence policy and decision making, not because of intended government action, but due to unintended consequences of action taken by global market actors, driven by advertising revenue and market share. Are these developments inverting the panoptic power of the state and vesting surveillance power to citizens? What are the social and political implications?

The emergence of commercial virtual globes (e.g. Google Earth) and the advent of web 2.0 open new possibilities for citizens to interact with other citizens and government. Web 2.0 facilitates dispersed collaboration by providing information to central sites, and to see that information is collated and made available to others (Goodchild, 2007). Combining Web 2.0 functionalities with virtual globes is meaningful for issues where place and spatial information are at the forefront and spins creativity and good citizenship.

### ***2.6.3. Transferring control from the state to the citizens***

Traditionally, bureaucracy has the role of bridging the formal political sphere and citizens. Its main legitimacy lays in the aim of rationalizing society by channeling social relations in formal procedures, based on formal rationality, rather than value rationality. Ideally, it guarantees equal and universal access to public administration, and downplays the role of tradition and charismatic figures. In “The Protestant Sects and the Spirit of Capitalism” Weber (1920) expresses his concerns about the bureaucratization of society with his famous metaphor of the “iron cage”. The last century showed that such a modernization path is not necessary, as different rationalities continue to exist and proliferate, with Foucault being an exemplar author on such line. Indeed, the universal institutionalization of formal rationality is not likely to happen any time soon, nor societies seem to be going that way. Information systems as those being discussed here -based on voluntary data production- may sideline bureaucracy rather than bring us towards an iron cage. Rather, mutual visibility and continuous negotiation appear as the way ahead of citizens and decision makers. Hoogenboom and Ossewaarde (2005) argue that such relation between state and citizens was legitimized by a ‘legal-rational authority’ which cannot be taken for granted in ‘late modernity’, characterized by different and competing rationalities. Late modernity sees the rise of reflexive organizations, which are more dependent on their actual environments. “Reflexive organizations further democratization because they force a bureaucratic elite to take the personal and social needs of the lay people seriously and they force them to communicate openly” (Hoogenboom & Ossewaarde, 2005). On the other side, these kind of organizations risk to be less universalistic, and more affected by individual qualities as mobilizing capacity of parts of society. With this framework in mind, we will introduce two examples of eGovernment efforts, which go in line with the idea of reflexive authority.

Moving to a globally interactive participation, citizen interests and international agendas become entangled drivers for political and social participation. The relative ease to provide location information with complaints through embedded GPS devices offers interesting opportunity for virtual globes to organise information spatially. Visualization of localized themes of grievances could provide citizens and policy-makers a different view into objectives and demands.

Goodchild (2007) has proposed to use “human sensors” and web2.0 to unlock the vast pool of local spatial knowledge as Volunteered Geographic Information (VGI). A VGI Network is a combination of a community of individuals who report observations through existing, widespread (mobile) communication technology and a set of (web) services that provide means to disseminate observations and means to receive feedback. Mobile phones are becoming the most widespread sensor device in the world offering the possibility to capture voice, pictures, video and location data in combination with a versatile interface to connect to global communication networks. The emerging framework in figure 11 is particularly appealing for this idea. Virtual globes offer a wide variety of ways to include VGI.

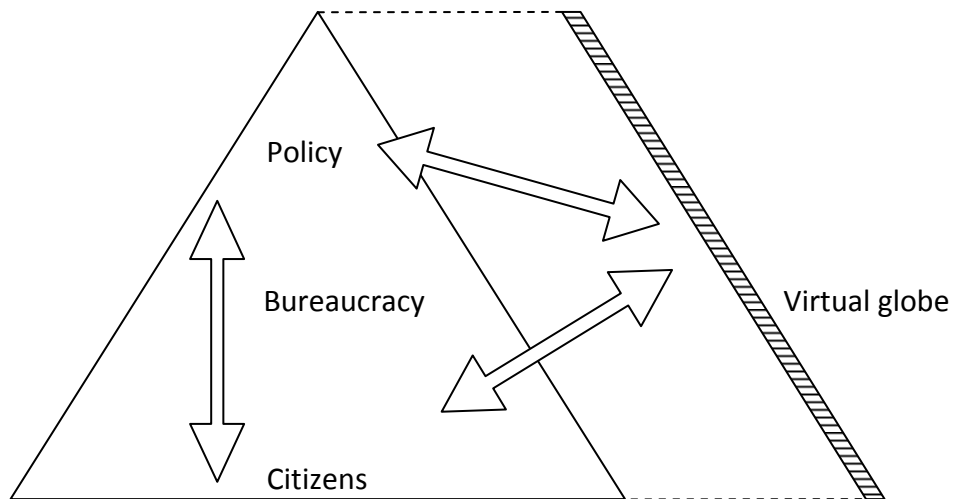


Figure 11 - Virtual globe acts as a mirror for citizens to participate in setting policy

#### 2.6.4. Discussion and Conclusions

VGI can be dubbed “participatory sensing” given the nature of geo-data generation by dispersed volunteers, where the voluntary aspect and the personal interest and motivation to contribute information are central. As argued by Craglia et al. (2008), platforms like Google Maps and Google Earth are combining both voluntary and institutional data. Without a mechanism to clearly distinguish the different nature of the data (through metadata), it will be difficult for citizens to take action and for administrators and policy makers to make accountable decisions on the basis of such data. If citizens are to be engaged or involved more in government decisions by sharing their knowledge (data, information and understanding) it should be done in a manner that maintains accessibility but also improves reliability and backs trust. It is, of course, not only trust in the platform and whether that platform displays the “truth” (Parks, 2009). Governance innovations are required for VGI to be put to relevant use and citizens to be trusted to provide the reliable information. This organic relation between citizens, geoIT and service providers pinpoints to the importance of “validation” of data produced by undefined users. Those who advocate for openness stress the self-regulation of open systems. Such position is opposed by formally structured organizations, which legitimize themselves on exclusionary basis. A possible third way would be the adoption of automatic ranking mechanisms, which select and rate information on the base of previous behaviours.

Rather than going into the details of systems that are under continuous development, we stress how our cases aim at affecting service provision activities by managing stakeholders’ mutual and external visibility differently. With respect to eGrievance, the Human Sensor Web example (or eGrievance) positions the interactions it mediates and data hereby produced, outside of the conventional bureaucratic procedures that eGrievance systems are designed upon. With this the old idea of control (Mansell, 2010) is possibly reverted, or becoming exploitable by the controlled.

By becoming a side addition to the existing tools like eGrievance, human sensed data on virtual globes act as a mirror through which policy-makers and citizens become more visible to each other. Accountability lines are therefore affected. Bureaucracy is likely to keep filtering citizen pressure, and the same citizens are likely to find workarounds to affect agenda setting. The virtual globe as a mirror (Figure 1) acts on the well known mechanism of showing and blaming: facilitating the public visualization of public interest issues like service provision, they leverage the public opinion in a less ad-hoc fashion than mass media. Quite likely, corporations or groups of citizens will be able to exploit the virtual globe to “sell” their point of view or product to a potentially broader audience. On the other hand, citizens become more visible to the state. The mediating role of the private sector is expected to focus itself on the transparent development and management of such platforms.