

Sharing data is good, but are we concerned enough about public protection and ethical data dissemination?

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Abstract

The increasing dissemination of geospatial data has the ability to support more informed decisions in a large number of sectors of today's society. While Spatial Data Infrastructures (SDI) activities have increased and diversified over the past decade, we argue that a major focus on technical challenges, such as standards, interoperability and metadata, has occluded other important and often more complex social and legal questions that limit the actual usefulness of these infrastructures for the general public. We believe the main goal and benefit of SDI has been to give people access to geospatial data, without necessarily helping them understand how those data can meet their needs or how to assess the limitations of those data. The number of misuses and accidents involving geospatial data suggests this data dissemination may not always have been carried out in an ethical manner or in a manner consistent with legal principles.

This paper summarizes the main research findings of a 4-year Canadian GEOIDE project that looked at law, data quality, public protection and ethics in relation to geospatial data. The project involved geomatics engineering professionals, geographers and lawyers, giving a multidisciplinary perspective on those questions. Relatively little work had previously been carried out in Canada on the legal framework related to geospatial data, including liability, privacy and intellectual property questions. This project, in collaboration with a number of government (e.g. Natural Resources Canada, Office of the Privacy Commissioner of Canada, Transportation Canada), industry (i.e. Groupe Trifide) and international partners (e.g. CERTU, Eurogeographics, International Civil Aviation Organization (ICAO)), laid important foundations in these areas.

A number of studies carried out within this project explored legal questions. For instance, Chandler (2010) reviewed possible legal responses to copyright infringement, defamation, privacy invasion and negligent misrepresentation in Volunteered Geographic Information (VGI). Chandler and Levitt (2011) studied civil liability related to the use of faulty geospatial data, discussing whether and when a private provider of geospatial data may be liable to pay for damages resulting from physical injury that occurs due to reliance on erroneous geospatial data. Judge and Scassa (2010) carried out a critical analysis of template licenses provided in GeoConnections' best practice guide for the licensing of Canadian federal government data. Scassa et al. (2011)

examined the privacy law implications raised by intelligent transportation systems. Scassa (2010a,b,c) completed a trilogy of papers that explored issues around privacy and geospatial information. These included when geographic information constitutes “personal information”, the legal implications of posting personal information in online maps, and issues around privacy in public spaces. Judge (2011) studied the legal history and policy basis for copyright protection of maps. Also, on-going work looks at the legal implications of the risks related to the new Quebec cadastral mapping system (Massé and Gervais, 2011).

We have also explored ways to prevent and deal with the consequences of geospatial data misuses or poor data quality in a number of contexts. Wilson et al. (2011) proposed a new method based on fuzzy-logic that helps users find the most appropriate datasets in a geospatial data clearinghouse, and have tested it for the Canadian GeoConnections Discovery Portal (Devillers et al., 2012). Coleman (2010a,b) looked at potential limitations of VGI and their opportunity for SDI. Larrivée et al. (2011) discussed the use of various professional activities, such as quality control, quality assurance, certification, accreditation and audits, in the context of geospatial data. The impact of such activities, along the already existing data quality controls, on the evolution of geomatics engineering profession was presented by Bédard (2011). They also proposed to create spatial data quality reports to raise users’ awareness of the quality question. Such reports can be manual or mostly computer-generated, based on existing metadata and catalogues as well as usage profiling. Of particular interest is the possibility to include quality-centered and misuse-centered VGI provided by future users of a system during the design of a spatial database (Grira et al., 2009). Public protection is also investigated from the point of view of ethical behaviour while acquiring and disseminating geospatial data. Focus group meetings allowed researchers to identify ethical values common to the Geomatics sector. The application of such code of values to the geospatial professional practices is being currently explored. Jones et al. (2010) developed and tested a method for visualizing the quality of 3D geospatial data in virtual globes, such as Google Earth, to help users assess how reliable those 3D data are. In the winter 2012, we also conducted the broadest survey in Canada looking at data quality and risk management from a user needs perspective. Invitations to complete the survey were sent to thousands of members or clients of the Centre of Topographic Information of Sherbrooke, Geoconnexions and the Canadian Institute of Geomatics. The survey and its results will be made available to organizations interested in conducting a similar exercise.

The breadth and the depth of these projects provide an unprecedented look at legal and ethical issues related to geospatial data dissemination and use in Canada, and is believed to contribute to the increasing body of knowledge related to these aspects for SDI around the world.

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