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Volunteered Geographic Information:

Selected Web Resources

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Abstract

Increasingly Volunteered Geographic Information (VGI) is being used to create and analyze spatial information through visualizations, and geospatial models. The geospatial data used, whether publicly provided or offered by volunteers, has been made available more and more through Web 2.0 technologies. Innovators are hosting more web mapping services, and users are sharing more data from GPS capable and affordable units. The best VGI products are reviewed by peers or members that perform quality control checks and updates. Already there are signs that volunteer information has been playing a critical role to deliver real-time information through crisis mapping such as for Haiti's and Japan's Earthquake disasters. Although best practices to assess data accuracy, lineage, reliability, and appropriate uses are still evolving in VGI, geospatial librarians need to think about making VGI information accessible through their reference desks, especially when critical and real time information is not available elsewhere. Library outreach and instruction modules could be constructed to offer patrons near real-time data for problem solving, and for improving their critical thinking and evaluative skills.

The online resources below provide important resources that are considered by the authors to be useful as an introduction to VGI efforts. The resources are presented in three categories: a) major VGI tools and resources, b) successful models for VGI for crisis information and mapping, and c) selected online VGI publications

Major VGI Tools and Resources

- CitySourced -www.citysourced.com

  In CitySourced, citizens can report their public affair issues such as public safety and environmental issues to local governments. It provides a positive and collaborative platform for real action toward local policy decision making.

- Eye on Earth-www.eyeonearth.eu/

  EyeOnEarth is an interactive monitoring tool for environmental issues (water and air quality) in Europe. Citizens are able to give their feedback and observations on EyeOnEarth data from mobile phones. This platform allows users to download Europe's environmental datasets and maps.

- Geo Commons- http://geocommons.com/

  GeoCommons is an advanced mapping service in which a user can visualize his/her own data to make custom maps including charts without charge. It serves data and maps from its open repository to business, professional and casual users, allowing them to create maps, even if they have little knowledge of GIS software. Citizens may submit their own data and search existing data files for their own reuse.

- GeoNode--http://geonode.org/

GeoNode, an effort supported by many partners including the WorldBank and OpenGeo, facilitates the creation, sharing, and collaborative use of geospatial data via several open source components: GeoServer, GeoNetwork, Django, and GeoExt. Used together they "provide a platform for sophisticated web browser spatial visualization and analysis". The project aims "to surpass existing spatial data infrastructure solutions by integrating robust social and cartographic tools". Users can register to compose and share maps and to explore maps created by others. You also can upload, manage and browse data.

- GISCorps--http://www.giscorps.org

GISCorps is an initiative of URISA in which volunteers are assigned to VGI efforts focusing on humanitarian problems.

- Google Map Maker- http://www.google.com/mapmaker

Google Map Maker was launched in 2011 so that Google's U.S maps could be completed with users' help. Since the launching, it has been used in over 180 countries. Users can add all kinds of information including geographic features (e.g., building outlines, roads, rails and bike paths, etc). With "Mapmaker Pulse (www.google.com/mapmaker/pulse)," a three-dimensional tool, people can watch the editing of the world map in real-time view layered onto Google Earth. Data can be downloaded using Google Pro.

- OpenStreetMap (OSM)- http://www.openstreetmap.org/

OpenStreetMap is a collaborative project that started in the UK in 2004. Users now use GPS data and aerial photographs to create maps and hillshade renderings. Topographic databases are used worldwide. All OSM data are freely downloadable but cannot be sold under the "Creative Commons Attribution-ShareAlike 2.0 license." OSM is a useful source for retrieving certain data and maps of Europe, since many other municipal maps are copyrighted.

- SeeClickFix- http://www.seeclickfix.com/

An open source Web site to allow anyone to report non-emergency neighborhood issues anywhere in the World through the Internet. It would be a good source to keep track of up-to-date neighborhood issues (construction sites, flooded areas, power outages, etc).

- Wikiloc- http://www.wikiloc.com/wikiloc/home.do

Wikilock is a tool that allows users to upload trail routes with GPS tracks and associated photos and videos for later use with Google Earth. Used around the world, it is a good tool to find unknown trails. A downloadable option is not yet available.

- Wikimapia- http://www.wikimapia.org/

Wikimapia, launched in 2006, is an editable interactive map platform that combines Google Maps with a wiki system. Users can add all kinds of information including geographic features, pictures including videos, and their descriptions. It has been used widely around the world as a pocket map with Wikimapedia's geo-located data. The data are peer-reviewed but one cannot download images or data.

VGI for Crisis Information and Mapping

- HyperCities Now- http://hypercities.com/blog/2011/05/07/hypercities-now-linking-gis-and-twitter-japan-egypt-libya/

HyperCities Now allows users to add maps and layers and link them to GIS and social media technologies such as Twitter in an interactive and hypermedia mapping environment. The blog provides links to GIS and Twitter of Japan, Egypt, and Libya. The archived data and map collection can be retrieved by location.

- InRelief- http://www.inrelief.org/

San Diego State University, Crisis Mapping and Crisis Commons are contributors to InRelief. InRelief seeks "to increase the velocity of the response during Humanitarian Assistance and Disaster Relief (HADR) events by connecting military/civilian organizations, disseminating data freely over the internet, and providing the collaborative tools to expedite the sharing of critical information." It uses web services and customized and collaborative cloud-computing solutions to deliver low bandwidth information to disaster areas.

- MapAction- http://www.mapaction.org/

MapAction is an Emergency Mapping Service based in the UK that has a small staff that uses volunteers to create maps of areas experiencing an emergency.

- Sahana Software Foundation- http://sahanafoundation.org/

The foundation develops "free and open source software and provide services that help solve concrete problems and bring efficiencies to disaster response coordination between governments, aid organizations, civil society and the victims themselves". They recently set up a relief effort in Japan to address the tsunami aftermath.

- Ushahidi- http://ushahidi.com/

Ushahidi is a "non-profit tech company that develops free and open source software for information collection on disaster situations, visualization and interactive mapping". It has developed the Ushahidi Platform, CrowdMap and SwiftRiver technology.

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