Open Geography: new tools and new initiatives

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In the past few years there has been a growing interest in digital mapping and the collection and use of geo-spatial information integrated with other kinds of information and media. The tools and commercial applications are suitable for use by nonprofessionals in a myriad of different contexts: social networks, web logs, multimedia presentations, and economic analyses.

For the past three years OReilly Press has sponsored where 2.0 to showcase new applications and movements in this field. While some are purely proprietary, there are multiple efforts to promote open consortia, open access to data, standards, and finished products. This activity is recent, but it has roots back in the 1980's when there was a debate about the geographic information systems and society. In the early 90's the term "participatory GIS" gained currency. It was also known as "community-oriented GIS." The idea was that the community participated in the gathering of data and the mapping of their own communities. In 1997 the National Research Council argued that "spatial analysis will continue to grow in importance" and that "spatial capabilities will expand citizen involvement." That was evident at the recent where 2.0 conference. Ten years later that seems to be happening. The Institute For The Future held a meeting in late 2004 that brought together disparate participants to discuss what they called the geospatial web. Mike Liebhold delivered this paper as he looked to the future. " The Geospatial Web: A Call to Action" http://www.iftf.org/docs/SR_869_Infrastructure_New_Geog.pdf

Geospatial information and tools can be considered one area of learning resources that was not covered by recent reports from the Hewlett Foundation or the OCLOS Roadmap 2012.

The term "open" in a geospatial context is applied in five ways: to standards and organizations promoting them, development tools, data sets, public policies, and to the lowering of barriers for average users to make use of the tools and maps. In addition there is one open hardware development project. OpenMoko is the world's first integrated open source mobile communications platform and a Taiwanese company, FIC, is manufacturing a phone called the NEO which developers are using to develope applications including geolocation. It is not ready for prime time, but if it is accepted by any carrier it will disrupt the way mobile services are provided around the world. http://openmoko.org.

Consortia and Organizations

The Open Source Geospatial Foundation, or OSGeo, (http://www.osgeo.org/) is "a not-for-profit organization whose mission is to support and promote the collaborative development of open geospatial technologies and data. The foundation provides financial, organizational and legal support to the broader open source geospatial community. It also serves as an independent legal entity to which community members can contribute code, funding and other resources, secure in the knowledge that their contributions will be maintained for public benefit. OSGeo also serves as an outreach and advocacy organization for the open source geospatial community, and provides a common forum and shared

infrastructure for improving cross-project collaboration."

The Open Geospatial Consortium, Inc (OGC)

(http://www.opengeospatial.org/ogc) is an international industry consortium of 340 companies, government agencies and universities participating in a consensus process to develop publicly available interface specifications. OpenGIS® Specifications support interoperable solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT.

The Open Knowledge Foundation http://www.okfn.org/ seems to be both a strong advocacy group with efforts to influence the European Parliament in the area of Open Geodata's mantra is "State-supported geographic is public property." They also support more general open knowledge production which may be of interest to the Hewlett Foundation.

Data Sets

The United States has benefitted in many ways from having public data sets that are freely used by scholars, commercial firms, consultants, and the public. An example of this is the TIGER system (Topologically Integrated Geographic Encoding and Referencing system http://www.census.gov/geo/www/tiger/) Many countries do not, and one British geospatial expert estimated that the closed nature of their system has cost them one billion pounds in lost business. The data belongs to the Crown, not the people! The European Union has tried to harmonize a bundle of restrictive national policies and has come to a compromise on INSPIRE a new data set to be used for environmental work. It will allow public access but allow restrictions on commercial use and certain citizen access. Generally local jurisdictions restrict and try to resell the data, sometimes at outrageous prices. There is an excellent 2005 summary of national policies, "Fee or Free" (www.gita.org/resources/whitepapers/Free_or_fee.pdf)

Collaborative and Cooperative Projects

These numerous projects generally enlist developers or others with some technical knowledge to build code libraries and working applications intended for use by the public. Tools include a variety of browsers and image manipulation programs.

Open Planning Project. http://www.openplans.org/ supports GeoServer. It is open source and it allows users to view and edit geographic data. http://www.geoserver.org/   In turn, GeoServer is built on GeoTools (http://geotools.codehaus.org/) This is the open source geographic information systems.

Open Layers (http://www.openlayers.org/) makes it easy to put a dynamic map in any web page. "OpenLayers is a pure JavaScript library for displaying map data in most modern web browsers, with no server-side dependencies. OpenLayers implements a (still-developing) JavaScript API for building rich web-based geographic applications, similar to the Google Maps and MSN Virtual Earth APIs, with one important difference -- OpenLayers is Free Software, developed for and by the Open Source software community."

One of OSGeo's projects is MapBender.
(http://www.mapbender.org/index.php/Main_Page) It is an Open Source
Geospatial Foundation project and all about maps!You can zoom in, out, pan,
click and query, turn layers on and off or add more maps. You can also add new
points to the map with the flag button.

uDig (http://udig.refractions.net/) is the User-friendly Desktop Internet GIS. "is
both a GeoSpatial application and a platform through which developers can
create new, derived applications." There are extensive guides for the new user.
The Free Map Server (http://freemap.in/) includes city projects for Mumbai, New
York City, Boston, London, and the World Free Map "a queryable version of the
CIA Factbook. Clicking on a country will show information about it, from the
population to the number of cell phones."

The University College London has a VR Center for the Built Environment
(http://www.vr.ucl.ac.uk/) which supports OpenStreetMap
(http://www.openstreetmap.org/) which is a free editable map of the world.
They stress using it in a collaborative way by anyone. An offshoot is
OpenGeoData (http://www.opengeodata.org/) a blog where one can keep up with
open maps, geodata, and OpenStreetMap.

It also supports the Integrated CEOS European Data Server (ICEDS)
http://iceds.ge.ucl.ac.uk/ which serves global and continental-scale, full-
resolution geographic information, particularly for Europe and Africa.
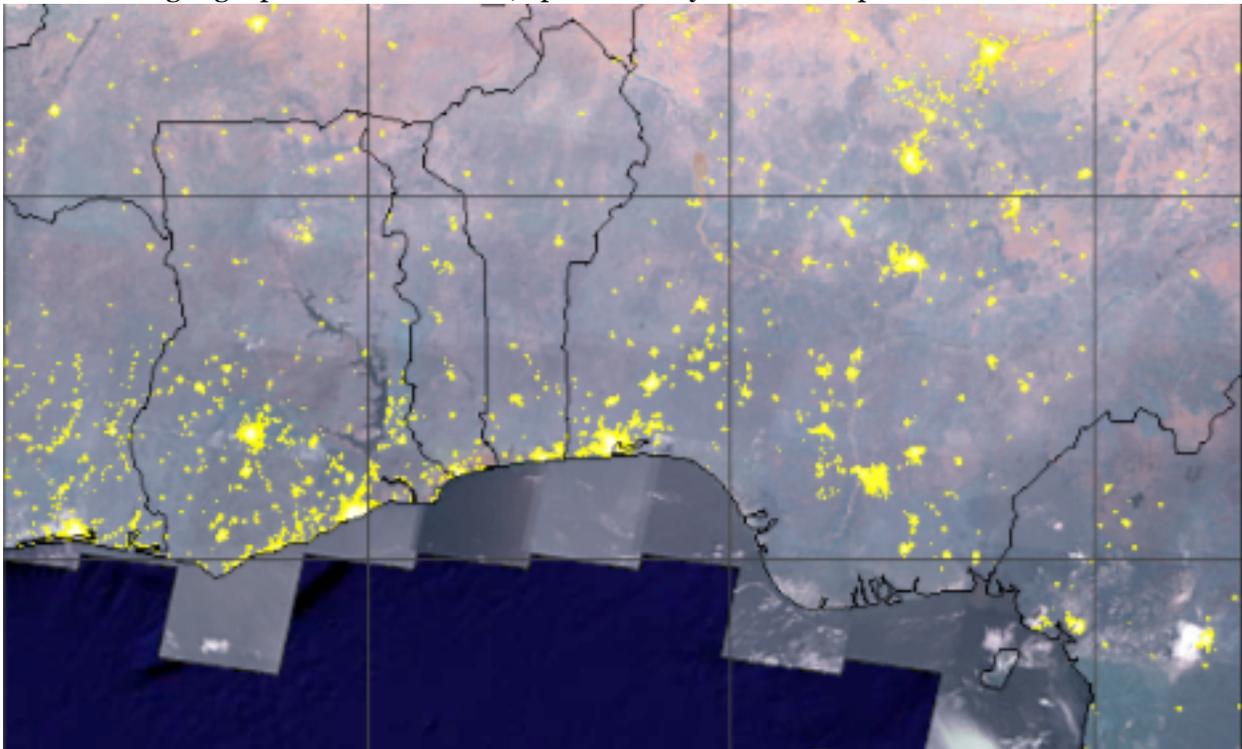
*This is an IECDS screen shot of W. African night lights, one of 35+ layers anyone can
use to compose their own view of the continent.*

EDINA is a British higher education service providing data of all sorts but very
little for anyone outside of the UK or academia. One service is DigiMap,
(http://edina.ac.uk/digimap/) which includes Ordnance surveys and
UKBORDERS.

Quantum GIS (http://qgis.org/) is a user friendly Open Source Geographic Information System (GIS) that runs on Linux, Unix, Mac OSX, and Windows. QGIS supports vector, raster, and database formats. QGIS is licensed under the GNU General Public License. QGIS lets you browse and create map data on your computer. It supports many common spatial data formats (e.g. ESRI ShapeFile, geotiff).

Application programming interface (API) for Google Maps and Yahoo!

This was created by Google to help developers integrate Google Maps into their web sites, with their own data points. These are for personal use or noncommercial use. Many of these are called mashups or combinations of data from different sources embedded into Google Maps. A blog tracks these in all their variety. Google Maps Mania http://googlemapsmania.blogspot.com/
Yahoo! has a similar project with many developers contributing examples. http://developer.yahoo.com/maps/applications.html.

Justin Everett-Church has combined flash, Yahoo Maps, a textured parchment background to make a zoomable pirate map of the U.S. Gulf region.

June 5, 2007