

How to motivate different players in VGI?

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BACKGROUND

Production and provision of maps and geographic data have traditionally remained within the purview of top-down expert organizations: mostly mapping agencies and commercial companies. Mapping agencies are often mandated by government directives to meet the needs for geographic data and maps in a society. Commercial companies follow market signals in order to maximize their business profit. For a long time, these expert organizations—which rely on professionally trained cartographers—enjoyed the economy of scale (Goodchild et al. 2007). It is partly because, in the past, map-making required expensive equipment and specialized expertise.

In recent years, citizen map-making has emerged as a new phenomenon. With decreasing cost of computer technology, expanding access to communication infrastructure, and the development of web 2.0, citizens are now increasingly collaborating in map-making activities via the Internet. Only a few years ago, it was difficult to imagine that people would collaboratively produce online maps as detailed as in Open Street Map (OSM). However, to date, little is known about who these people are and why they spend their time and effort in observing, measuring, and sharing information about the properties of the earth's surface. Researchers, for example Benkler (2006) and Budhathoki et al. (2008), consider it a puzzling phenomenon particularly given that there are no obviously higher benefits for contributors than for the free riders.

OUR RESEARCH

A PhD dissertation research conducted at the University of Illinois at Urbana-Champaign focuses on the contributors to OSM. It analyzed an analysis of the contributory pattern of about 30,000 contributors to OpenStreetMap. A survey was administered to understand their characteristics and motivations to contribute. The research findings should support our better understanding of this emerging phenomenon and for the advancement of the science of VGI.

Our study shows that only a small fraction of VGI participants actually contribute. In the case of OSM, only about 30% registered users have ever contributed geographic information. Among those contributors, about 40% have contributed only once since they joined the project. Thus, only a small fraction of participants take part in mapping seriously in VGI; others either do not map at all or they just lurk.

The survey results reveal that the majority of contributors are educated and tech savvy males with some prior experience in geospatial technology. It suggests that those who take part in this

open map-making are not laypeople as claimed in recent mainstream GIS literature. Further, we find that mappers are predominantly from Europe and North America, indicating a long way for VGI to be a universal source of GI.

Equally interesting are the findings on motivations. Vast majority of the contributors believe that they can create more accurate and detailed maps than the expert organizations. They are conscious about their knowledge of local geospatial situation and believe that knowledge can play an ‘instrumental’ role in creating maps that are open for others to edit and free of cost for use and value-added tasks. Further, those who actively contribute to VGI are driven by their desire to learn about the world geography as well as reinvigorate their understanding of the local community.

AGENDA FOR DISCUSSION

The above findings lead us to the following questions, which we are interested to discuss in the workshop:

- ***How to motivate greater number of citizens to participate and contribute to VGI?***
Budhathoki et al. (2010) have identified an extensive list of motivational factors and have shown how those factors play out in VGI. However, translation of those factors in the design of ‘social’ and ‘technical’ aspects of a VGI system in tandem is still a challenge.
- ***How to motivate traditional producers to embrace VGI and utilize citizen-contributed GI?***
While VGI has drawn the attention of national mapping agencies, it is not clear what would stimulate those agencies to embrace the emerging VGI tools and data. For example, what would be the ways to incorporate the VGI into the official SDIs.
- ***How to motivate government (especially in countries where digital divide is high) to expand the provision of infrastructure such as the Internet and to promote geospatial literacy?*** We argue that VGI provides an opportunity for new ways of using the Internet by governments. For example, in many cases, Google Earth serves as a source of information on fire spread in country sites; pictures and videos from local residents would invaluablely augment such sources. This would particularly be useful for those countries where government capacity to identify and monitor such rapidly changing disaster situations is low. Thus, VGI may simultaneously provide a case for effective use as well as expansion of cyberinfrastructure.

Our approach is multidisciplinary and we draw from different disciplines: GIScience, information science, social psychology, political economy, new literacy, and leisure studies.

References

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