

# **A Faustian Dilemma: Identifying the Challenges and Opportunities of Designing and Implementing Geoweb projects within Academic Institutions**

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## **Abstract**

Community-based Research (CBR) is a growing area of research that often focuses on action research and/or affecting social change. A core component of research in GIScience is focused on supporting the objectives of CBR includes Community Cartography, Participatory GIS and more recently the Participatory Geoweb. Geolive was developed at the University of British Columbia specifically to address the emerging opportunity of the Geoweb to support public participation in spatial decision-making. Within a university environment, a series of tensions emerge between the institution (i.e. the academy), the individual academics and the organizations that work on the development and deployment of Geolive. These tensions include **time and scale, value, agility** and **capacity**. These tensions combine to undermine some of the fundamental principles of CBR that Geolive specifically sets out to support.

## **Background**

Universities are uniquely positioned to play a central role in the design, development and deployment of geographic information technologies that can be used to address issues faced by local communities. However, we need to be clear that universities are not simply service providers in these processes, they are also beneficiaries; this is because community-based research (an increasingly active area of research) can generate substantial funds, as well as act as an effective medium for public relations and outreach. Furthermore, academics cannot exclude themselves from the cycle of benefits involved with the development and deployment of these tools. So the benefits work across different scales and include various actors.

This paper explores some of the challenges and opportunities of designing and implementing Geoweb projects within the academy. These processes will be positioned within the theoretical framework of community-based research (CBR). The paper will use the case study of Geolive, a participatory Geoweb application, developed at the University of British Columbia to explore four areas of tension encountered while conducting community-mapping projects in a university context. Specifically we examine the contrast between the universities stated institutional aims and the consequences of its institutional practices.

## **Methodological position**

Community-based Research (CBR) is a growing research paradigm built on the principles of “systematic inquiry, with the participation of those affected by the problem, for the purposes of education, action or affecting social change” (Minkler 2004). CBR is an overarching term that encompasses various methodologies. The scope of CBR ranges from radical CBR, which focuses on grassroots movements, community organization and relies on conflict theory to achieve peaceful resolution through community development and service delivery (Stoeker 2003). CBR has provided an important lens for GIScience researchers working with communities to reflect on and communicate the results of their research.

CBR critiques conventional means of knowledge production and the naturalization of the researcher as gate-keeper, expert, and the main beneficiary of research (Strand 2000). CBR values the democratization of knowledge, where multiple forms of knowledge are respected, including experiential knowledge (Minkler 2004). Power and control of knowledge is shared as the barriers between researcher and researched are broken down. In CBR equitable relationships are encouraged and community members are ideally involved with the research through every stage of the process (Strand 2000; Strand et al. 2003). As CBR is research “for the people”, at its core, it involves participation, action, co-learning and capacity building.

Furthermore, CBR practitioners believe that knowledge produced through research should be relevant, accessible and distributed in innovative ways that are useful for community members. As a pragmatic means for solving problems for communities, CBR practitioners view “research for research’s sake” as pointless and immoral (St. Denis 1992). Instead, theory and practice should be merged to bring about real benefits for communities. Furthermore, CBR has the potential to encourage relevant research relationships between universities (and other post-secondary institutions) and adjacent communities (Strand et al. 2003).

CBR does not exist in isolation of the institutional mandates in which the research occurs. In other words, the increasing popularity of CBR amongst academics and researchers is accompanied by broader institutional support for their role of becoming active agents in community engagement and social change agendas. This is reflected in both institutional strategic planning documentation (for example see ‘Place and Promise: the UBC Plan at <http://strategicplan.ubc.ca/>) as well as increasing interest to support social enterprise ventures as well as related research activities (University College of London 2013)

Research in Geography, and more specifically GIScience, has been an active proponent in supporting the implementation of CBR projects (Bednarz et al. 2008). Community cartography, Participatory Geographic Information Systems (PGIS) and now more recently the Participatory Geoweb, have all been employed to support public participation (Corbett and Keller 2005). Geolive was developed specifically to address the emerging opportunity of the Geoweb to support public participation in spatial decision-making.

Geolive is a participatory web-mapping application designed and programmed at the University of British Columbia, Canada. It provides a flexible and extendable framework to facilitate communities' ability to capture, manage and communicate their own spatial data. The map acts as a medium through which registered users can share their own multimedia information and experiences about a specific place. Geolive offers a range of distinct functions - among others, it allows multiple users to simultaneously contribute data to a map; it features tiered access, meaning that different types of user have access to specific map data while other data remains hidden; it emphasizes making large amounts of data manageable and meaningful; and it allows administrators to access and download project datasets and repurpose them using other database software, such as Geographic Information Systems. Geolive is a versatile tool that has been used to support a number of participatory mapping projects, ranging from small simple maps displaying points, lines and polygons, through to complex projects with strict user groups and access permissions.

We invested the requisite time and energy into creating this tool because of the lack of 'out of the box solutions' and the need for custom solutions. We speculate that this is partially because the partners with whom we work are often funding poor, thus making investment into online mapping at best unattractive, but more typically impossible. In order to overcome this restriction (i.e. no funds) we have created a devolvement model that is very agile. It involves a 'just in time programming' approach which allows us to develop tailor made niche components that interface with the Geolive's core. This allows us to further program the application's functionality, but with relatively small amounts of funding, thus working within the confines of our partners financial restrictions.

We anticipate that the Geolive tool will continue to grow and be applied in situations that will directly benefit local communities and associated organizations to address their land-related knowledge documentation, decision-making and development needs. Up to the present Geolive has been applied using a cost-recovery model. In other words the developers and the SPICE lab have deployed the tool in a manner that is strictly not-for-profit. All the funds received to date have been spent on the direct development and deployment of the tool. This ethical, community-focused approach will continue to be the central motivation behind the future application of the tool. We are considering the commercialization of Geolive, however, this move remains in its infancy. We would also ensure, even in its commercial application, that the tool be made available directly to communities on a sliding scale based on the ability to pay.

### **The tensions**

When we take the development model identified above and situate it within a university environment, a series of tensions begin to emerge between the institution (i.e. the academy), the individual academics and the organizations with whom we work.

*Tension 1: Time and scale*

Despite being well positioned (from an intellectual and infrastructural perspective) to support the development and delivery of participatory Geoweb applications, the university, from an institutional perspective, is often in conflict with the principles and timeframes of the communities and representative organizations with whom we partner (as well as the academics on the ground). For example, organizations often work with tight timelines for grant funding and project delivery, while the university is often slow to respond to opportunity and is further slowed by bureaucratic requirements. Furthermore, the differences of scale and administration make the navigation of the related bureaucracy complex and opaque to our community partners.

### *Tension 2: Value*

The neoliberal agenda which appears to be increasingly central to the university shapes research relationships because the focus is to: 1) Compete - produce publications and attract research funding, and 2) Grow - by attracting students, and 3) Control - the message, the individual academics, and thus the overall research endeavor. These motivations are often not only in conflict with those of partner organizations and communities, but also the academics undertaking the research. Because in the university some forms of research are assigned greater value (and thus recognition and resources) than others.

### *Tension 3: Agility*

When academics and researchers are successful in attracting funds, they are often constrained in how they can deploy and spend funds. At UBC, one of the principal drawbacks is the need to spend funds within a given project timeframes. Funds cannot be stored for later deployment. This means that in the development of these tools we are caught in 'boom and bust cycles' that not only have a strong bearing on the long-term success of the tool, but also impact the ability to continue to effectively manage ongoing projects.

### *Tension 4: Capacity*

Both universities and individual researchers often approach participatory Geoweb projects, and more broadly CBR relationships, in a state of naivety. They are ill equipped to navigate the complexity of developing long-term partner relationships, and often tend to over-focus on tool development and the more material aspects of these projects. There needs to be a greater critical reflection in order to meaningfully engage, understand and play a role in these community transformations. Within this milieu we need to have concrete skills to help manage stakeholder expectations.

## **Conclusions**

In conclusion, we developed Geolive as a tool to facilitate communities' ability to capture, manage and communicate their own spatial data. If we examine these intended objectives alongside the intent of CBR we need to question whether the development of these applications is an effective means to encourage meaningful research relationships. Perhaps the inequalities, misunderstandings and scales that exist between the actors might remain too great to truly support these types of relationship. Furthermore,

because of the highly specialist nature of the development programming and application deployment both the university, as well as the individual researchers will continue to play the role of gatekeeper. This ultimately means that power and control of knowledge is not shared and in fact the barriers between researcher and researched grow rather than are broken down.

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