
Community Data Hackathons

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Abstract

We are investigating community data: data gathered, analyzed, interpreted, and used by members of a local community. Community members are already engaged in community data practices. Our goal is to help make these more visible throughout the community, and to engage the community at large in deliberation and planning with respect to its data. We are hoping to organize a set of community-wide hackathon events as part of this effort.

Author Keywords

Community Data; Hackathon

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

As part of a long-term research project focused on community data, we are investigating the role of hyperlocal data in contemporary community. Data pertaining to a community and its locale, that is, data gathered, analyzed, interpreted, and used by members of a local community, is community data. There can be many different kinds of community data. Examples include but are not limited to: water and air quality, demographics, narratives about historically significant places, photographs of weather events, and so forth.

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Through community data, the community describes the community to itself in order to understand its past, regulate its present, and plan its future. For example, several organizations in State College, PA, collect water quality data with the goal of supporting community leaders and citizens in making sustainable decisions about water use and land development.

However, it is a known issue within the open data and open government literature that availability of and access to data is insufficient to produce pervasive community participation (Janssen, Charalabidis, & Zuiderwijk, 2012). We are interested in the possibility of leveraging data hackathons as means to engage citizens with community data. Our goal is to identify needs and opportunities for citizens to better understand and contribute to data-driven civic participation as a focus for community innovation.

Citizens of the past needed to possess basic levels of textual literacy. More recently, it has been argued that students ought to develop data literacy (Koltay, 2015). In our view, data literacy is crucial for today's citizens. Citizens need to have facility in understanding and using data, and they need to be able to think critically and creatively about the many uses of data they might encounter. They will likely encounter a lot. From 2005-2010 the amount of data produced in the world increased tenfold. And, by 2020, it has been projected that the amount of data in the world might exceed 40,000 exabytes (Uhl & Gollenia, 2014).

In our view, data literacy will help citizens identify relevant data, analyze and interpret data, participate more actively as community members, and use data in everyday civic contexts, such as public hearings about

rezoning and land development and casual conversations with colleagues and neighbors. The use of data and data-driven argumentation to shape decisions and policies at the local level provides one opportunity to strengthen local democracy and democratic practices in general.

Current information infrastructures, digital devices and sensors can empower citizens to initiate data-driven investigations of community concerns, such as: heritage protection, water quality management, energy regulation, and public by-way safety. Citizens can identify pertinent issues and research questions, coordinate with other citizens, gather and publish data sets online, and moderate community discussions and deliberations. Their role would be akin to those of citizen scientists with the exception that there would not necessarily be oversight from a subject-matter expert. Citizens would have greater autonomy and agency with regard to such projects. We want to help to make such initiatives easier to organize and carry out and more visible to the larger community.

These threads converge in the transformative possibility that data-enabled citizens could more constructively and effectively participate in and shape local governance that is itself data-oriented. Local governance has often failed through conflicts grounded in irreconcilable judgment and self-interest (Coleman, 1957). Since there are other factors driving decision-making, data may not be a panacea for human conflict. Moreover, it may not be possible to realize a discourse that is free from judgment and interests. However, in our view, data can create an opportunity for more reasoned, rational discourse to come into being. At the very least, data are a shared community resource that

has been under leveraged.

What could public hearings look like if more citizens were able to identify data relevant to a pressing civic issue and accurately analyze and interpret it? We believe that their contribution would almost certainly be more substantive and convincing.

With this in mind, we want to facilitate a series of community data hackathons: workshops where multiple stakeholders and subject matter experts generate ideas, plans, designs, or prototypes in response to a design brief that we will provide (Morelli et al., 2017). Hackathons and other kinds of community workshops have been used to engage citizens around open data and pertinent civic issues. We are aware that the term “hackathons” is packed with meaning, and so we are interested to discuss the strengths and limitations of referring to events like the ones we envision as hackathons.

A key element of our approach would be that participants (citizens) contribute ideas and proposals directed at possible future courses of action. They do not merely generate diverse ideas (as in brainstorming) or criticize existing approaches. For example, at an early-stage hackathon, it might be possible to articulate different levels of data literacy, identify learning objectives to achieve those levels, and plan a series of community workshops aimed at achieving those objectives. This means that our participants would not only be charged with advancing planned work but in planning the work as well, including (potentially) defining the metrics for its success. We see this level of citizen participation as a crucial step towards sustaining a long-term community data project.

We want to leverage our experience in community-scale participatory design (Carroll et al., 2000; Carroll, 2012; Carroll & Rosson, 2013) to engage a wide range of community stakeholders in large-scale action research. Participatory design is both an inclusive and equitable approach to design and a method for engaging with and learning about stakeholder values, practices and knowledge (Béguin, 2003; Simonsen & Hertzum, 2012). But we also want to fully leverage best practices in intensive, one-day hackathon events.

Acknowledgements

This work is supported by a Faculty Fellowship from Student Engagement Network of Pennsylvania State University.

References

1. Béguin, P. (2003) Design as a mutual learning process between users and designers. *Interacting with Computers*, 15(5), 709-730.
2. Carroll, J.M. (2012). *The neighborhood in the Internet: Design research projects in community informatics*. New York/London: Routledge
3. Carroll, J.M., Chin, G., Rosson, M.B. & Neale, D.C. 2000. The Development of Cooperation: Five years of participatory design in the virtual school. In D. Boyarski & W. Kellogg (Eds.), *DIS'2000: Designing Interactive Systems* (Brooklyn, New York, August 17-19). New York: Association for Computing Machinery, pp. 239-251.
4. Coleman, J.S. (1957). *Community conflict*. Glencoe: Free Press
5. Janssen, M., Charalabidis, Y., & Zuiderwijk, A. (2012). Benefits, adoption barriers, and myths of open data and open government. *Information Systems Management*, 29: 258-268.

6. Koltay, T. (2015). Data literacy: in search of a name and identity. *Journal of Documentation*, 71(2), 401-415.
7. Morelli, N., Aguilar, M., Concilio, G., Götzen, A. D., Mulder, I., Pedersen, J., & Torntoft, L. K. (2017) Framing design to support social innovation: The open4citizens project, *The Design Journal*, 20, 1, pp. 3171--3184
8. Simonsen, J., & Hertzum, M. (2012) Sustained participatory design: Extending the iterative approach. *Design Issues*, 28(3), Summer
9. Uhl, A., & Gollenia, L-A. (2014) *Digital enterprise transformation: A business-driven approach to leveraging innovative IT*. New York: Routledge