HCI Interventions with Nonprofit Organizations: Tactics for Effective Collaboration

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Abstract

Thirty HCI practitioners participated in a CHI 2011 workshop [7], intending to directly engage with the processes, goals, and challenges of six Vancouver area nonprofit organizations. Analysis of the workshop documentation allowed us to track instances of reciprocal interaction between stakeholders. Findings revealed that various design tactics were productive in enabling collaborators to improve their focus on addressing key challenges in the 2-day workshop. This case study contributes new knowledge – tactics to conduct and evaluate HCI Design Interventions with nonprofits, as well as helping to expand the emerging intersection of political computing and human-computer interaction.

Author Keywords

Community, Politics, Social Change, Design Intervention, Sustainability, Design Research

ACM Classification Keywords

H.5.3 Group and Organization Interfaces, Computer-supported cooperative work.

Introduction

In North America, shifting social priorities have decreased the amount of funding currently available to nonprofit organizations. People working in this domain

are overwhelmed by the increased demand for their services, and the increasingly difficult situation given their limited resources. Often the people running nonprofit organizations are experts in their domain, but know little about the capacities of their technological infrastructure. Staff in these organizations may not be aware of how to implement newer technologies or how to deal with unexpected issues associated with them (e.g., how to deal with security/privacy issues with community data or procedures for maintaining repositories).

We applaud HCI practitioners who see opportunities for research in this domain yet often these efforts become techno-centric, avoiding the politics integral to these situations [4]. The problem is that HCI is a pervasive necessity for most nonprofit organizations from an operational (grant writing, financial reporting, and research), outreach and archival perspective.

HCI researchers (HCI RE) who have first-hand knowledge of working with these organizations understand the discrepancies. Innovation is associated with the effectiveness of the social service provided rather then by a technological solution. In such scenarios, the researcher's position shifts away from the standard scientific stance as a detached observer or designer, and comes into conflict with the norms of HCI research [3].

With this in mind, HCI interventions have ranged from bold hacker-activists tracking criminals on the Internet to the everyday contributions of maintaining a database. Either way, the HCI RE has invested philosophically in the politics of that organization and the community that upholds those interests [6].

Disalvo et al. explain that community-based interventions emphasize the political aspects of HCI explicitly by working with political groups engaged in taking action or by working with people in such a way that power relations are visible [3]. Often in community-based research design, tactics intentionally intervene and inform reciprocal relationships with a focus on negotiating goals and objectives [6]. HCI REs interested in forming reciprocal relationships in this context are often motivated by an underlying behavior regarding fairness in trade or barter [8]. In the sections that follow we provide the background information and discuss our methods for conducting this case study; and in the process we present tactics for conducting more effective design interventions.

Background

At CHI 2011 Kuznetsov et al. organized a two-day workshop inviting 30 practitioners from the HCI community to move beyond the theoretical discourse of design interventions and directly engage with the processes, goals, and challenges of six nonprofit organizations (descriptions in left sidebar) [7]. Workshop organizers used a community-based approach to structure the design of the workshop. Cultural theorist Arlene Goldbard claims that the use of these strategies combine both artistic and organizing skills, helping members discover their own cultural identities while exercising control over their own cultural development [5]. Prior to attending, each organization identified a design challenge they wanted a team of HCI REs to address. *Peers Vancouver* wanted to develop an online tool that would protect people's anonymity to support outreach. *The Richmond Fruit Sharing Project* wanted to explore how they could use online tools to promote urban agriculture to
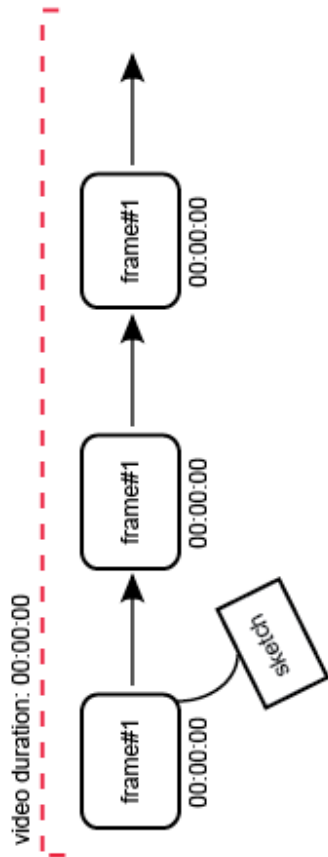
Figure 1. Video Analysis
This Illustration represents the frame-by-frame coding of each video sequence and the relationship to method.

community residents. *Gallery Gachet* wanted to learn how they could use technology to foster financial support. *Vancouver Media Co-op* was interested in how technology could support different types of reporting, as well as supporting participatory economics. *Frog Hollow Neighbourhood House* asked how to support intergenerational dialogue within immigrant populations. *Velopalooza* was interested in developing a riders' guide for good scenic bike tours to spur interest in cycling among residents.

On day one of the workshop, HCI REs attended an orientation meeting, assembled into groups of five and met their host non-profit organization in the afternoon. They conducted field visits and discussed the exact nature of their design challenge. On day two, HCI REs and some of the nonprofit representatives (NP REP) returned to the workshop space and continued to work on the design challenge. Workshop organizers facilitated some of the activities while the video photographer documented the collaborations at different stages during the day.

Methods
For this case study we adapted a video coding method most recently used in the Canadian health network [1]. Boschman's technique uses Final Cut Pro X (a video editing software program) to assign keywords to identify important video clips in the same way that researchers use codes to delineate data [1]. Boschman has used this method to code interview data in two recent studies interpreting cancer health and physical activity. In this analysis, we adapted her method to code sequences of face-to-face communications supporting the design process among HCI REs and non-profit members. By analyzing the video sequences

frame-by-frame, we were able to code and capture the exchange of ideas and identify tactics used in conducting the interventions. An example of this process can been seen in figure 1 on the sidebar. In conjunction with the video analysis, we also asked NP REPs for their impressions of the workshop experience. The video analysis and interviews were combined to formulate findings.

Findings
In total we reviewed and logged 20 video segments. Within this collection, 10 sequences directly supported the design process. Of those, 6 sequences included conversations between HCI REs only and 4 sequences included HCI REs working with NP REPs. In the process, we identified the three different tactics – *building, advising,* and *expanding* – used by HCI REs to engage NP REPs. In the next section, we discuss each tactic observed and the corresponding NP REP's responses.

Building Tactics
In two of the video sequences we observed HCI REs using a combination of participatory strategies to engage NP REPs in the building of conceptual models. This approach helped HCI REs clarify terms and business practices and NP REPs were able to participate in the design of solutions. NP REPs' impressions of this process suggested it was not the best use of their time. While they were able to receive verbal feedback about their design solution, they preferred a written report and implementation plan.

Advising Tactics
In one of the video sequences we observed HCI REs using an ethnographic approach to collect information on the nonprofit organization. HCI REs then conducted

a quick assessment and compiled a report offering three options for solving the nonprofit's design challenge. The NP REPs returned to the workshop on day two and were advised by the HCI REs of the solutions. These solutions were well received by NP REPs, particularly in terms of how straightforward and executable these strategies were, and how easily they could be shared with members of their organization.

Extending Tactics
In two of the video sequences we observed HCI REs overextending the ideation phase of the design process. Rather than focusing on a solution, HCI REs introduced a variety of technologies and scenarios. Some HCI REs claimed that their choice of method was the direct result of the organization not having clear objectives or the design challenge being beyond the scope of the workshop. NP REPs explained they felt overwhelmed with all of the options. HCI REs should consider the organization's limitations before suggesting options.

Conclusion

In this case study, we have discussed the use of video sequence analysis to track instances of reciprocal interaction between stakeholders. We identified three different tactics *Building, Advising* and *Extending* and combined NP REPs' impressions to learn how reciprocity (fairness) translated through the workshop experience. We learned that HCI REs who used *Advising Tactics* where able to deliver expert recommendations in a timely manner. More importantly, design interventions are reciprocal when HCI REs use their expertise to conduct a triage-like assessment that builds on the nonprofit's ability to share ideas and implement plans.

Figure 2. PEERS Sketch
HCI researchers and non-profit representatives build conceptual models through sketching.

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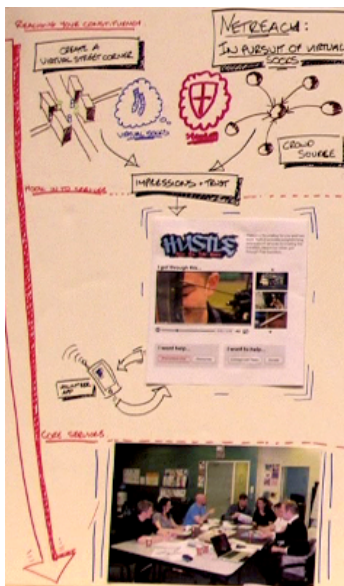8. Rabin, M. (1993). Incorporating fairness into game theory and economics. *The American economic review*, 1281-1302