Inclusivity in Town Halls: Challenges, Paradigm Shift, and Opportunities

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CHI'20,, April 25–30, 2020, Honolulu, HI, USA
ACM 978-1-4503-6819-3/20/04.
https://doi.org/10.1145/3334480.XXXXXXX

Abstract
Traditional face-to-face town halls remain a popular choice for community consultation for government officials at local and national levels due to their ability to foster discourse and help the officials understand community members' viewpoints and aspirations. However, current town halls suffer from a lack of inclusive participation where vocal attendees often dominate the conversation, and silent attendees' opinions remain unspoken. In this article, we draw from our experiences of designing civic technologies to address this problem and articulate existing approaches and their shortcomings. We also highlight the paradigm shift in town halls during the COVID-19 pandemic and identify new opportunities for designing civic technologies to facilitate inclusive participation in future town halls.

Author Keywords
civic technology, town halls, digital civics

CCS Concepts
•Human-centered computing → Human computer interaction (HCI);

Government officials' preference towards face-to-face synchronous town-hall meetings to gather public opinion towards civic issues and agendas can be attributed to their objective of creating a two-way communication channel be-

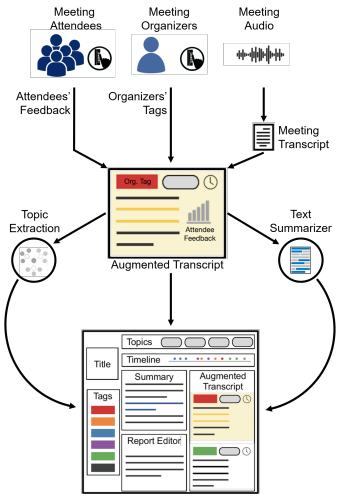

Figure 1: A snapshot of CommunityClick's workflow. During the meeting, attendees and organizers can use iClickers to share feedback and tag the meeting. The meeting is also audio-recorded. The recordings are transcribed automatically and then augmented with the organizer's tags and attendees' feedback. Furthermore, we generated the feedback-weighted discussion summary and extracted the most relevant topics. The interactive interface enables the exploration and utilization of augmented meeting discussions, which is available online for organizers to examine and author meeting reports.

tween the public and themselves to gauge the dynamics of public perception [22, 7, 12]. However, fixed time slots and physical locations for co-located meetings alongside lack of resources such as time, budget, and human resources restrict government officials to fully utilize the town hall meetings [18, 23, 13]. Furthermore, for the community members who attend the town halls, social dynamics such as shyness and tendency to avoid confrontation with dominant personalities might restrain their abilities to share opinions [4, 27]. This lack of inclusivity often induces disinterest in the general public to participate in town hall meetings [8, 6]. Investigations by Bryan [5] and Gastil [9] corroborate with this scenario as they highlight a steady decline in civic participation in town halls due to a growing disconnect between the local government and community members.

Existing Approaches and Recurring Challenges

In recent years, several civic technologies have been proposed to increase engagement in town halls. For instance, some researchers have experimented with audience response systems (ARS) [3, 20]. Bergstrom et al. used a single button device for attendees to anonymously vote agree or disagree on civic issues. They demonstrated how back-channel voting can help underrepresented users to get involved in the meeting discussion [3]. The America*Speaks*' public engagement platform, 21 Century Town Meeting®, also uses audience response systems to poll the attendees during town halls or share their opinion by voting on proposed agendas [20]. However, in these works, the ARS are used for binary voting or polling [3, 20], or to get responses on Likert scale-like questions [19] prompted by organizers at specific times in the meeting. As such, they do not enable attendees to provide real-time feedback.

Other researchers have proposed various solutions to increase participation in face-to-face meetings such as design charrettes, or general group-meetings, by using interactive tabletop and large screen surfaces to engage attendees [21, 11, 25]. For example, UD Co-Spaces [21] used a tabletop-centered multi-display environment for engaging the public in complex urban design processes. Memtable [11] used a tabletop display to integrate attendees' annotations on top of multimedia artifacts. IdeaWall used real-time visualizations of thematically grouped discussion contents on a large screen to encourage meeting attendees to discuss such topics [25]. However, large displays and real-time visualizations might distract attendees from concentrating on meeting discussions [2], and lead to fewer contribution [10]. Furthermore, using expensive tabletops and large interactive displays might be financially and practically infeasible in a majority of cities.

In our recent work [14], we partnered with local government officials to design civic technologies to help them collect more inclusive public data from town halls. Inspired by the success of audience response in the education domain [24, 28], we decided to use iClickers but performed additional modifications to allow reticent participants to provide real-time feedback on ongoing discussions silently by clicking five customizable options on the iClickers. We integrated the attendees' feedback with the automatically generated meeting transcript and applied text analysis methods including topic modeling and a novel feedback-weighted text summarization for a more inclusive analysis process. We deployed this tool, CommunityClick in a town hall and interviewed eight organizers to evaluate our approach. The results of the evaluation demonstrate that our approach has the potential to create an equitable platform by enabling silent attendees to share their opinions anonymously in real-time during town halls and allowing organizers to account for silent attendees' feedback in their reports. Fig-

ure. 1 shows the workflow of our approach in capturing attendees' feedback and enabling analysis of such feedback.

Despite the initial success of our approach, there were concerns around the use of iClickers as the mechanism for capturing silent attendees' feedback as it can create distractions and provide an unfair advantage to younger and tech-savvy attendees who might be more receptive of novel civic technologies in town halls. Furthermore, there are logistical overheads associated with the procurement and maintenance of such physical devices. In addition, while CommunityClick allows attendees' to share their opinion in real-time, they are still limited to using five options and cannot provide entirely open-ended textual comments.

COVID-19 Conundrum and Future Opportunities

During the early 2020, the COVID-19 pandemic originated from the SARS-CoV-2 or more colloquially termed Coronavirus forced the overwhelming majority of world's nations into lockdown, which still continues to several regions in the world to date. During this time, the overwhelming majority of the face-to-face public consultation methods including town halls came to a stand still due to the danger associated with public congregation and the risk of spreading the virus. As a result, in hopes of maintaining a functional participation of community members in local governance, the majority of the states in the United states and governments around the world sought after alternative solutions to hold town halls meetings. Many of them moved towards synchronous online virtual town hall meetings [1]. However, this major paradigm shift has rendered previous face-to-face in-situ civic technology requiring physical interactions, such as large interactive surfaces, wall interfaces, and even audience response systems such as clicker devices ineffective, since the discussions have moved online. As the world struggles to recover and find a new normal to adapt to this shift in daily life, new possibilities have opened up for innovation and development of civic technologies as research shows that virtual town halls and online engagement in general can attract and accommodate a larger audience previously disenfranchised by the challenges associated with face-to-face town halls [15, 26].

Despite being online, the virtual town halls often do not allow the virtual attendees to provide real-time feedback silently or anonymously as the organizers are often restricted in different ways by the tools used to arrange the virtual town halls. To learn more about these new challenges, we interviewed 3 organizers (O) who evaluated our CommunityClick tool [14]. One organizer (O1) mentioned, *"We use Zoom for our virtual town halls and the organization setup for these meetings have the chat options disabled. The only way for attendees to participate is to identify themselves and then speak up."* Another (O2) revealed even more constrained practices, saying *"During the discussions, all attendees are muted. They can raise their hands and an organizer will moderate the discussion by allowing people to contribute by letting them speak at specific times. However, these meetings take one hour or two hours and many don't get the chance to say what they want."* In essence, these virtual town halls have changed the mode of communication, but the challenges towards inclusivity including the inability to provide real-time and anonymous feedback still prevail as articulated by O3, *"Like regular town halls, we keep listening to a handful of people while the rest stay silent or just leave the meeting."*

To translate CommunityClick's success in regular town-halls to virtual town-halls and transcend the requirement of having physical iClickers, CommunityClick could be augmented with a virtual clicker developed as a web-application, which can be accessed online. Figure 2 shows a prototype that

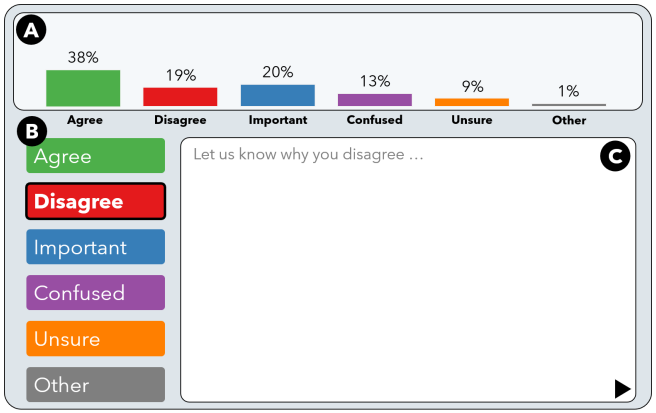

Figure 2: A prototype for CommunityClick's virtual clicker. A) The bar chart provides live statistics based on the feedback of all attendees during the meeting. B) A set of customizable options for attendees to provide feedback on the ongoing virtual town hall discussion. C) A textbox where attendees can provide open-ended text feedback according to the feedback option they selected. In this example, the attendee has chosen to disagree with the ongoing discussion and can provide justification if they choose to.

enables virtual attendees to share their opinion using different options similar to physical iClickers while attending the virtual town hall using the tool used by the organizers (Figure 2B). In addition to providing options to provide feedback on the ongoing virtual discussion, the attendees can provide further explanations regarding their choices by providing open-ended text comments (Figure 2C). Furthermore, the prototype could also provide overall live statistics of how all the attendees have been responding to the meeting discussion which could lead to further engagement while keeping the attendees updated to the flow of the discussion (Figure 2A). In future, we intend to engage and further our partnership with organizers who are grappling with the new challenges around virtual town halls to collectively design, develop, and evaluate novel civic technologies that can address these challenges.

Future civic technology researchers and designers could also explore ways to provide support for facilitating online synchronous group discussion by designing automatic or semi-automatic chatbots. Previous works have seen success in deploying chatbots to help facilitate goal-oriented synchronous online discussions [17], increase engagement [29] and promote attendees to contribute more [16].

As the world gradually recovers and returns to normalcy, the pandemic lockdown and rethinking of town halls could motivate the local government to open up to online virtual town halls as a complementary method of community consultation, given the recent success of engaging more attendees without the physical space restrictions. It is critical for future researchers to adapt to this new possible paradigm shift and rise to the challenge of designing and developing new civic technologies to facilitate more inclusive engagement and opinion sharing in town halls, virtual or otherwise.

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