From Creating Spaces for Civic Discourse to Creating Resources for Action

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ABSTRACT
In this paper, we investigate the role of technology to address the concerns of a civil society group carrying out community-level consultation on the allocation of £1 million of community funds. We explore issues of devolved decision-making through the evaluation of a sociodigital system designed to foster deliberative virtues. We describe the ways in which this group used our system in their consultation practices. Our findings highlight how they adopted our technology to privilege specific forms of expression, ascertain issues in their community, make use of and make sense of community data, and create resources for action within their existing practices. Based on related fieldwork we discuss the impacts of structuring and configuring tools for 'talk-based' consultation in order to turn attention to the potential pitfalls and prospects for designing civic technologies that create resources for action for civil society.

Author Keywords
Digital Civics; civic technology; civil society; sociodigital systems; civic participation; deliberation.

CSS Concepts
• **Human-centered computing~Empirical studies in collaborative and social computing** • Human-centered computing~HCI theory, concepts and models • Human-centered computing~Interactive systems and tools

INTRODUCTION
The engagement of community members and local citizens in specific issues or concerns has been made simpler by the design of civic technologies [55]. In CSCW and HCI there has been a move away from modes of collecting community opinion that rely on aggregative forms data collection at the individual level toward supporting new modes of collective engagement [11,39,46] with a focus on community cohesion and relationship building [4,33,59]. This shift in focus from 'nose count' [42] modes of democracy to 'talk-based' [13], and a recognition and focus on the importance of technologies that facilitate face-to-face community engagement [4,18], is increasingly recognised and discussed, although not exclusively or exhaustively, as a 'digital civics' approach [19,62,75].

Within the shift to face-to-face and talk-based approaches there has also been a movement toward discursive and dialogue-based methods. For example, storytelling and experience-sharing has inspired designs and methods which focus on supporting the facilitation and capture of 'everyday talk' around issues and matters of importance to specific communities [21,34,56]. Less attention has been paid to how the capture of such material leads to action, however. As such, questions remain about the ability of civil society groups to listen to and understand community views, and the ways in which the types of community-generate data gathered by civic technologies is utilised and analysed by civil society actors [55], both in terms of legitimacy of the process and the ability to make it 'actionable' [3].

In this paper, we explore the role of civic technologies to support discursive engagements and capture citizen opinion and views around matters of concern. In particular, we focus on the ways technologies might support civil society to make rich qualitative community-generated data a 'resource for action' [72] during their public consultation processes. Following previous work in the space [33,46], we designed *Ambit*, a sociodigital system that provided a collection of digital tools and associated social and organisational processes to help civic society groups plan, structure, document and make sense of data from discursive community consultation activities. Through three cumulative phases we carried out exploratory fieldwork, designed and implemented a sociodigital intervention, and evaluated the system in use.

Our findings outline the ways the group integrated the data *Ambit* produced into their existing practices and adapted their processes to adopt the system into their consultation. In reporting on our trial of *Ambit*, we offer two contributions to the growing fields of civic technology and digital civics. First, we report on the role of our sociodigital system in promoting new forms of public deliberation [13,36]—as a form of face-to-face engagement in which civil society have a vital role [30,31,45]—in community-level decision-making processes. Second, we offer reflections on rich qualitative data around the ways digital civics can support local decision-making.

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BACKGROUND

Many communities in the United Kingdom (UK), Europe and the United States have had to deal with a deficit in public services caused by aggressive cuts to government funding at the local and regional level [41,53,54,61]. One consequence of this has been a greater reliance on civil society groups – community organisations, civic associations, groups of citizens and the voluntary sector involved at the community level – to provide the social infrastructure within communities to ensure the needs of residents and local citizens are still met, and in some cases to fill gaps where public services have ceased to exist. Related to this, the UK government has developed a suite of policies over the last decade that have intended to help civil society groups take greater ownership and 'devolved responsibility' over the future planning of the places and geographical locations they operate within [25,35]. Part of this increased level of responsibility means they are often tasked with asking for the views of their community, either as a requisite of receiving funding or as a responsibility to law-makers [35,69,71]. This is further complicated by the need to show evidence – both that a particular consultation has happened, and that the views of local people have been meaningfully accounted for in any reporting, policies or new initiatives developed on the back of it [49]. Prior research suggests that community organisations in these roles may find it easier to show aggregative methods of consultation, such as votes and referenda, or cumulative methods such as petitions and surveys [16,46,55]. However, the reliance on these methods can be restrictive in the ways it permits the ability of citizens to 'set the agenda' or offer the rich experiences they have as experts of their own community [2]. As such, the ability to evidence community views is both ethically and epistemologically significant to civic technology design, and as well as a requisite of funding, is tied to concerns over the democratic legitimacy of such processes [26].

For some time, HCI scholarship has discussed, articulated and debated the challenges involved in working with community organisations and the value of digital technologies in facilitating new civic practices and processes [e.g., 11,18,48,60,73]. More recently, a body of work has emerged under the rubric of 'digital civics' – which "aims to support citizens becoming agents of democracy with and through technologies and in dialogue with the institutions that can actualize public will" [75:1097]. In the following sections, we argue that digital civics research is increasingly characterised by the way it fosters three functions: (1) supporting organisations to carry out processes of public engagement; (2) building capacities of organisations and citizens around *data*; and, (3) creating *spaces* for citizen-led discussion of issues and the articulation of concerns.

Supporting Organisations in their Public Engagement

HCI researchers are no longer just deploying technologies for opinion gathering and consultation or studying sociodigital systems in use – rather, they are aiming to support civil society organisations in performing their own public engagement and consultation practices [62]. For example, *PosterVote* [74] was a system created to be flexibly appropriated and deployed by activists as part of a broad range of their activities, rather than being deployed by researchers and evaluating them on the activists behalf. Harding et al. [40] have argued that in HCI there is an unhealthy preoccupation with empowering citizens through giving them a voice in democratic processes, and instead propose that better results may be wielded from supporting civil and civic associations as a method to better support citizens. In effect, they infer here there is greater benefit in working in collaboration with those community organisations who seek to engage and advocate for groups of citizens, rather than directly with citizens themselves.

In setting out their synthesis of social justice-oriented work in HCI, Dombrowski et al. [32] implore that in 'designing for transformation' researchers should work at the community level, in order to rethink problems at scale, not at the individual level. This brings attention to the need to ensure the sustainability of new systems and processes, beyond the timeframe of researchers' projects. For example, Taylor et al. [73] and Balestrini et al. [5] have discussed importance of building relationships with local residents and community leaders through the duration of projects and ensure skills and infrastructure are in place to sustain endeavours beyond the completion of the research study. Much work has reported on the ethical and methodological issues of 'leaving the wild' [73] and creating projects that sustain beyond researcher involvement [5,14,67]. The underlying epistemological reason to carefully design the work of collaboration with community organisations and civil society groups is, as Agid and Chin [2:75] have argued, rooted in the specific and located values, arguments, and worldviews people and organisations bring into design contexts. Therefore, it is important to support organisations to utilise the knowledge in their communities in ways that become consequential to their decision-making and policy-forming activities.

Building Capacities through Civic Technology

One way forward in terms of ensuring the longer-term sustainability of digital civics projects in communities might be to build capabilities and capacities within community organisations to adopt civic technologies. Agid and Chin, in their embedded design work with community groups, have argued that "collaborative design research must be understood in terms of how […] it is made useful by people on the ground" [2:86]. In other words, it is the responsibility of researchers and designers working in civic and community spaces to support organisations and individuals develop their skills, resources, and practices [5,8] as part of initiatives focused on the deployment and evaluation of new digital systems. Alongside the agenda to build capacities of organisations there has been a more specific focus on increasing the capacities of civil society organisations to make sense of data [65,66] and act upon data they gather [3,52]. This endeavour has primarily taken shape around studies and projects that attempted to increase the data

literacy of citizens [10,22,57,76,78], projects that have taken a learning and skills development approach [38,39,77], and had the aim to develop collaborative sense-making practices [6,64,76].

Increasingly the *collaborative-ness* of such data sense-making exercises is emphasised. Within this paradigm, 'data commons' research projects have pointed to the need for, and potential benefits of, local hubs for resources, knowledge-sharing and understanding [4,7]. As well as sharing data, such projects have involved co-designing data collection (sensor) tools and collaboration with 'expert' stakeholders [7], providing training so that residents could be supported to collect their own interview data [4], and using citizen-generated data to allow citizens to express critical opinions on their local environment [27,65]. However, the ways data support advocacy [65] and can lead to action [58] are thought to come from situations where data is viewed "not as a means of fact-collection, but a space for discourse, discussion, and argumentation" [23:1726]. In the public planning literature, there has long been a will to shape "public learning as well as public opinion" [37], and the role of planning as a 'deliberative action' are apparent in particular within ideas of 'collaborative planning' [43,44] which emphasise the responsibilities of civil society to foster place-making activities.

Creating Spaces for Civic Discourse

In paralell to these concerns around sustainability of civic technology initiatves and the need to build capapcities in communities and relevent organisations for their use, researchers have called for more dialagic approaches [39,46,68]. Such approaches motivate digital civics work to take a more 'deliberative stance' [e.g. 63], as a way to bring the value of local knowledge and expertise to the fore. For example, some approaches have focused on storytelling as a means to lower the barrier to particpantion in urban planning [56], for civil society to show evidence of their work [34], and to gather counter narratives to be added to political debate [29] or to support social movements [28]. In this paradigm, stories are "linked to a 'equality of intelligence' not 'sanctioned' knowledge" [21:2966]. Previous work in this space has looked to use game mechanics such as prompt cards and turn-taking to structure group talk [46]. The creation of spaces for dialogue are also well regarded as means by which citizens learn to participate in public life: "Through the participatory process itself, people begin to perceive the needs of others, develop some solidarity, and conceptualise their own interests more broadly" [1:206].

OUR CONTEXT

Our collaborators were one of 150 communities around the UK that were allocated at least £1m of investment from a national funding organisation called the Big Lottery Fund. Each community was selected due to a historic lack of funding from Big Lottery Fund and other public funding sources, and for their relative levels of socio-economic deprivation. Each area established a group (called a Local Trust) made up of residents, volunteers, paid administrators and community engagement officers to steer the project and make decisions about the funding allocation. The funding organisation encourage autonomy from the local governmental authority, and other national organisations. Despite the social renewal this promises in the form of empowering community actors to 'do it for themselves', this puts emphasis on groups' ability to encourage participation and carry out effective consultation. The funder also strongly encourages that groups talk to a range of people within their communities to ascertain matters of local concern, rather than focus on their "favourite problem". This puts emphasis on the need for Trusts to identify who their 'community' is, and explore diverse ways to ensure local needs are identified.

STUDY DESIGN

Our contact and collaboration with the Local Trust (the *Trust*) for the neighbouring villages of *Liddlesdale*, *Elsdon*, *Lupton* and *Carson* (all pseudonyms) began when they contacted us through a board member while we were working on a project around participatory budgeting in a neighbouring town [48]. They asked the lead author to present the technology used in it to the board members in order to help generate ideas related to expanding their existing and previous consultation activities. This initial meeting set in action a two-year collaboration with the Trust. Our collaboration initially involved exploratory fieldwork, where we had further meetings with Trust members to explore the challenges they faced engaging residents in their activities, understanding their existing practices of consultation and the social geographies [50] of the villages. Based on this, building on our own prior work and the insights from exploratory research, we designed and implemented *Ambit*, a sociodigital civic technology intended to be used as part of the Trust's consultation processes tied to their allocation of community funds. The final stage of study involved investigating the impact of *Ambit*. This was first done through analysis of the discussions and interactions between community members during consultation events where the system was used. We conducted a further series of interviews with the engagement officer and other volunteers in the Trust about how data gathered and made sense of from the *Ambit* system was actioned post-consultation, and led to the development of new policies and initiatives within the community. We give more detail on each of these phases of activity below.

Exploratory Fieldwork

This phase started with a series of meetings with the Trust board at their regular Trust board meeting. During this time the first author observed meetings and various community activities organised or facilitated by the Trust. Ongoing formative meetings focused on the upcoming 2-year plan for the group, which were described as a *"transition point*" in which the Trust were required to develop a plan and allocate the associated budget. A focus in these meetings turned to the forms of engagement and methods for consultation the Trust should develop going forward. Previous engagement

activities had relied on town hall meetings, a survey to all households in the area, and various public meetings and events at their main community hub building in Liddlesdale. Part of the requirement at this stage was for the Trust to produce a report for the funders based on the previous two years of activity. The expectation here was that the Trust would show evidence of the consultation they have carried out and how this linked to outcomes. This was something they found very difficult to produce, and recognised could have been done more meaningfully in terms of incorporating the views and needs of groups across the three villages. As such, they wanted to make sure such opportunities were designed into the next stage of planning.

Attendance at these meetings also involved us presenting technologies we had used in previous projects to the Trust members, as well as examples of civic technologies used elsewhere. During these encounters some members of the group showed a reluctance to create a 'black hole' where we opened up new opportunities for residents to give their views without a way to be accountable or even keep track of what information they received. The Trust had experience of opening up channels of communication on social media platforms and were becoming increasingly concerned that they would be seen as ignoring community members or that responding to all of this would take up too much time and ask too much of Trust members who were volunteers. In addition, there was a concern raised by some board members that the research team would simply increase their workload, and create more confusion to residents about who the Trust were and their role in the community. One of their objectives in the new plan was to raise the Trust's profile in the community (with the intention to involve more people) and raise awareness of the projects and activities run by the Trust. As such, too much explicit presence of the researcher in the villages, and in the running of any new activities, was a genuine concern early on in our collaboration.

The individual we worked most closely with at the Trust was a public engagement officer (PEO). This initial fieldwork period involved going on a tour of the villages with the PEO, where the first author was given an oral history where they pointed out important community buildings, transport routes, and amenities (or severe lack of). In discussions, the PEO articulated the aims of the group and an ambition to gather a holistic picture across all of the villages, with a more grounded approach than previous public engagement (under erstwhile PEO) and more emphasis on residents' quality of life. The Trusts are afforded a large degree of flexibility in how they structure themselves and allocate funding. Our partner Trust gave out small sums of money direct to small groups of residents or other local civil society groups to support the running of services and groups, from help with venue costs to new equipment or running costs. Their main avenue for fund allocation was to receive proposals from organisations or businesses to carry out larger infrastructure projects, or run services at a wider scale. They felt that previous engagement activities had been too 'top-down' and focused on asking residents to select which projects they preferred. The new approach would see the Trust speak to residents first to establish priorities then put out a call to organisations to bid for funding to address the priorities. In reality this was a two-part endeavour. First, to raise awareness of both the Trust's existing projects and the resources available in each village. Second, to ensure their focus and the concentration of projects and allocation of funding was equitable across all villages.

Many of these issues were considered to be the same for many of the other 149 Trusts that were funded through this scheme. However, our collaborators felt they had a unique issue in coming to terms with the distributed nature of their community. The funding was allocated to a boundary area including four villages who, despite their relative geographic proximity, operated autonomously with the exception of some shared resources between two villages. For example, residents of Carson (one of the smallest of the four villages) would travel to their closest neighbours in Elsdon to use the post office. In other circumstances it was more convenient for residents to travel to the nearest large market town by bus than attempt to travel from one village to another. What this meant, in practical terms, was that despite the funding being allocated to the villages as a collective, there was very little history of cohesion and a joint identity between them. The ambition was to 'future-proof' spending plans by making it more collective across villages, which meant establishing an understanding across the villages that *"there can't be four of everything"*. The Trust identified a problem they described as an *"issue of territory"*, highlighting that the four villages were not "*naturally connected"*. For example, Carson had a strong residents association but the PEO described this village as made up of a young person's group, and older persons group, and a travellers group - three milieu that the residents association could not represent. On the other hand there is a Youth Forum that is being set up across all villages.

Summary of Preliminary Findings

During the exploration phase of the study we identified four key challenges for our partner organisation. First, the Trust had a desire and epistemic need to foster a discussion and generate ideas about the community from community members. The Trust had used engagement methods before but had little participation from community members, both in terms of numbers and depth, and thus had been unable to ascertain about what the needs of their community were. They had held town hall meetings and other forms of community engagement in the past (at Liddlesdale Community Hub) but poor attendance and an inability for the Trust to act upon them required them to establish a new strategy. Second, the Trust had to see the four separate villages as one community, but had experienced difficulty in getting people together in one place – people only stayed in their own village (due to their personal desire, or perhaps because the last bus is at 2pm!). Third, the Trust required evidence 'of consultation' as well as 'for consultation', in so much as they have to show how they are addressing their

plan, as well as any of the expected outcomes from the funding body. Finally, the Trust need to run consultation processes that resulted in things they could act on, and that led to clear outputs they could use as evidence.

Intervening with our Sociodigital System

Fieldwork and discussions with the Trust led to the design of a system that enabled them to run a digitally augmented consultation process that collected qualitative data from remote and disparate locations in a way that enabled a form of sense making that created 'actionable' data. We aimed to provide both digital components that helped plan, facilitate, capture and organise data from engagement sessions, and also social infrastructuring elements that helped community organisations make sense of data and integrate it into existing consultation processes. Importantly, we wanted to work in a way that did not create more work for the Trust by inflicting our ideals about how consultation should be run.

The subsequent system, *Ambit*, is a browser-based application that uses a webcam and microphone to capture audio recordings and position data from a physical marker placed on a pre-defined 'map'. It was designed to respond to the issues from the exploratory fieldwork in the following ways; first, we designed physical and digital artefacts to support turn-taking, reason-giving, and building on one another's ideas within in-person, group, and community engagement events. The physicality and materiality was intended to enforce a structure and balance with serendipity of prompts and topics for discussion. Second, Ambit was designed to be mobile to support the Trust to organise and run engagements in locations appropriate to specific interest groups and populations across the villages. Third, the system provides structure and support to facilitate dialogue-based consultation. Finally, the system supports the sense-making processes for the Trust by organising data into geographic area, specific themes, prompts or sources, and grouping together data from across the villages and supporting sorting and filtering of audio data. In addition, the system produced snippets of audio data, annotated digital maps, and other 'visualisations' of the data which could be recorded and stored for future use in reporting as well as future planning.

Pre-consultation tasks

The system was designed to encourage the Trust to set-up the consultation through a series of tasks. The first stage is to use the application to setup a new *Event*, within which several *Sessions* may be created. Creating an *Event* represents the design of a new workshop, where the organiser can upload the *Map* image to be used in the workshop and create discussion *Prompts*. The prompts can be categorised using one of seven 'prompt-types' which the organiser selects from a drop-down list. Once a 'prompt type' is selected, the platform suggests a generic prompt in order to guide the organisers own choice. Each prompt can also be assigned a free text entry 'theme' if appropriate. For example, the Trust had thematic working groups and focus areas (e.g., environment, transport, and well-being) and by adding the theme at this stage they could sort or search by these in the review stage, within the platform (see fig 4). Initially, the Trust themed the prompts based on their five thematic areas, which they did by asking each thematic working group to create their own which they reviewed and compiled into one list and added them to our system.

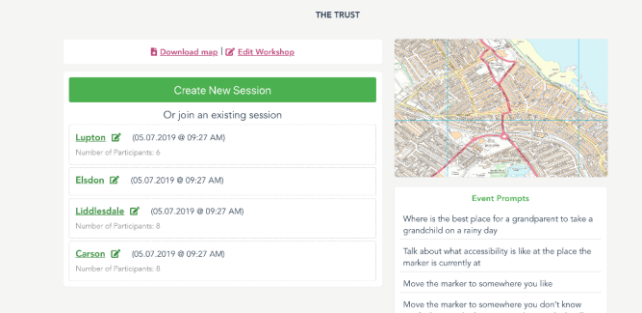

Figure 1. Interface showing Event home page

Once the *Event* is created, the organiser is presented with the new *Event* page (see fig 1) from which they can add new workshop *Sessions* and download the image of the map in PDF format ready to be printed. The PDF file is a single sheet of A0 size consisting of the original map image surrounded by a number of matrix-code markers. The scale and size are important as they contain the markers used to frame the camera vision plain, but during the exploration phase it became clear that we could not expect community organisations such as the Trust to have the resources required to print large images, without the expense of an external printing service. As such, the system can create a set of A4 images that may be put together to create the full *Map* image.

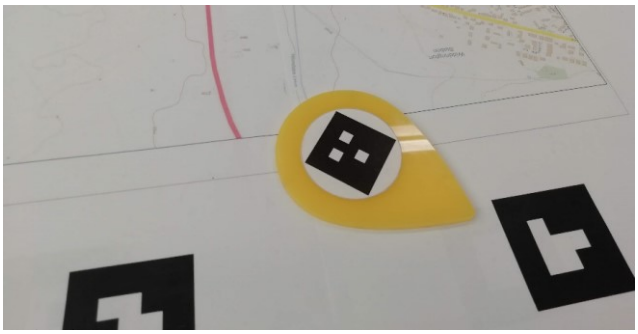

Figure 2. Physical marker on map used during workshop session for deliberative workshops

During the Workshops

During sessions, participants use the physical marker on the map to indicate the location around which the discussion is revolving (see fig 2). The application utilises the *ARToolKit* library [79] to detect special matrix-code markers printed on the map as well as on the physical marker, allowing it to record the locations and areas being discussed on the map alongside the audio of the discussion. A screen, positioned on the table where a discussion is being held, shows the detected position of the marker on the map at any moment, and also displays a number of prompts to facilitate the discussion (see

fig 3). When the session is finished, the application instantly produces a visualisation of all location and audio data. The camera is set in a position that is orthogonal to the map sheet and can capture the entirety of the sheet. An icon indicating the location of the marker is shown on the map screen, negating the need to show the 'live video'. This saves on storage of data due to browser restrictions and responds to concerns about privacy expressed by our collaborators. A bar along the bottom of the interface indicates the status of the recorded data and audio files (see fig 3). After a session is marked as finished by the facilitator or organiser, the session data is stored and sorted ready for review (see fig 4).

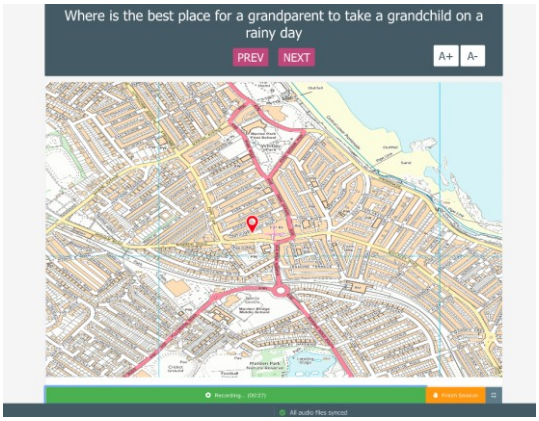

Figure 3. Interface displaying the map, the current prompt, marker position and status bar showing data is being recorded

Reviewing and Evaluation

The *Ambit* platform enables *Review* immediately after a session is marked as finished. In this stage the platform displays a map with coloured markers representing each section of audio, with a corresponding place in the temporal audio bar, and a prompt window from which the audio section may be played back. This map interface may be manipulated by zooming into areas and maneuvering round the map by scrolling and dragging the image. Alternatively, the audio may be searched by clicking on a desired prompt on the left side of the screen. If a marker on the map is selected the relevant part of the audio bar and prompt on the left is highlighted (see fig 4).

Evaluation of Ambit

The final stage of the project involved investigating the Trust's use of *Ambit* as part of their ongoing consultation activities. During this phase of activity, while the research team provided initial introductions and demonstrations of the key components of the system, we aimed to intervene as little as possible in the actual running of events and use of the technology 'in the wild'. During consultation sessions, the lead researcher conducted ethnographic observation and took field notes, focusing on both the use of *Ambit* by Trust members and the ways resident-participants engaged with the consultation activities and each other during the event. We also conducted interviews with Trust staff and volunteers, at various stages throughout the collaboration.

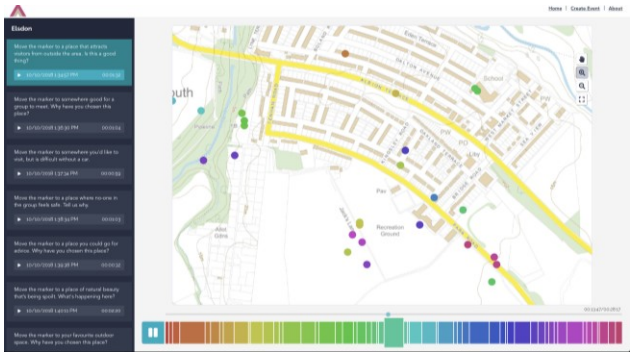

Figure 4. Visualisation of Session data for review

Over the course of the consultation sessions, the Trust board members created 50 prompts for the *Event* tagged under 5 thematic areas, which were used in 5 individual *Sessions*. During the *Sessions*, 39 resident-participants logged 104 individual data points that with location and prompt meta-data for review. During this phase of the study the research team also listened back over the audio from sessions (captured via the *Ambit* system on each table) and re-visited the field notes taken by the lead author during them, taking notes and beginning to make analytical connections.

FINDINGS

Audio data from the deliberative workshops, plus the interview data, was transcribed and thematically analysed [12,17]. Analysis of data was conducted through open-coding, but with a specific focus on drawing out insights related to the way the system was used and implemented by the Trust. Data analysis led to the development of four themes, which we outline and discuss in the following sections.

Valuing Structured Openness

At the outset of the consultation, our collaborators had concerns around the potential openness of the discussions being facilitated by *Ambit*. While there was a desire to be more inclusive and open to involving a wide range of community members, there was some reticence around where the conversations around the maps might take residents, and whether it would be possible to make sense of resulting discussion: *"I think the danger is, if you have quite an open consultation discussion, it just ends up being very big, very wide, no kind of natural steps in it, I suppose."* (T1). However, having started to use *Ambit* in consultation sessions, the Trust started to see the value of the more open-ended, discursive, mode of engagement the system afforded. For example, T3 valued the open nature of the sessions and the lack of formality felt in the discussions: *"It was, really, really, informal. I think that is quite a good way of doing it. People who want the opportunity to have a longer conversation can do that as well."* A key quality of the workshops that was seen to be a success was that they avoided being seen as just data collection activities, and engendered a sense of sharing of experiences between residents.

While the prompts and activities provided by *Ambit* were relatively open, there was of course a degree of structure to the format. The use of the maps implied a structure, but was enacted through the turn-taking mechanics and prompts the Trust provided residents to respond to. T3 observed how: *"Even though they don't know what necessarily the detail of it is, they can see that there is a process that they are meant to be working through."* They went on to reflect: *"So I guess it kind of reins people in a little bit. I mean, people were very polite, weren't they?"* T2 saw structuring as something that bounded the conversations: *"I think because of this process, people were definitely more cautious about going off on tangents and were actually kind of asking permission to."*

This is not to say all sessions, and tables of residents, successfully engaged with the structure and the other residents they were working with. T3 noted that in some cases residents would disobey the order of prompts, which would often lead to others on the table to focusing their comments on one specific location: *"The problem with that session was that whosever turn it was would say, "This is the place and this is what I'm saying about it." Then, somebody else would say, "Oh, actually, I've got something I like to say."* This was a characteristic of about half of the sessions the Trust ran. Participants, rather than moving to the next topic, chose to take it in turns to have their say on one issue or point on the map. The opportunity for residents to have an open discussion and debate took priority over the system 'working right' however, and enforcing participants-residents followed the rules that had been established:

"*You know, when… as long as what they're talking about is generally the stuff about the area they live in and about how they feel about it. For the most part, if there's a bit of a tangent, I don't think that's the end of the world. I get that that doesn't necessarily sit very well with using the technology in that way."* (T3)

Come the end of the consultation, the members of the Trust started to see the benefits of balancing openness with a degree of specificity and structure. It avoided asking residents for ideas themselves, which was felt would *"put people on the spot"* and end up with *"a huge number of people who would go, "I've got no idea."* (T2), while also leading to deeper insight about under-understood problems and unmet needs in the communities: *"it's better doing it the way round that we are, which is trying to get back, again, into the nitty-gritty of the issues"* (T3). Furthermore, it was felt that the types of engagement facilitated through *Ambit* had led to evidence that would be more valuable in reporting back to funders. T1, a chair for the Trust, explained how the data our system generated could be used as evidence for their plan: *"When we put the new project plan together, they're interested in what's in the plan but they're also interested in how we got to that part."*

The negotiation between opening up dialogue and restricting what residents should discuss was a key success factor for the consultation. Our collaborators valued the openness of group discussions but felt that this worked primarily because it was grounded in local place with a flexible structure that promoted conviviality.

Facilitating, Shaping, and Controlling Discussions

Building on the above, the Trust valued the way the system provided a facilitative role during the workshops. This structure was positioned as a positive in light of past experiences of certain residents dominating discussions at public meetings: *"People are a little bit more conscious about the time they are taking up or the direction their conversation is going in.* [...] *What we didn't get was anybody up on a soapbox about anything, going off on irrelevant things."* (T2).

Beyond an individual dominating the discussion, there were concerns about specific issues taking over. T3 gave a specific example of this with one group: *"I did think, "Is this whole session going to end up being about that one issue?" Actually, that didn't happen at all. They mentioned it, they mentioned in passing what was happening but I think they also took that opportunity to ask me a question about it. They didn't dwell on it at all. They could see that there was an agenda, I suppose."*

The role of the facilitator was a dominant topic in my discussions with T3 at the end of each session. At times, they showed a concern that they should more clearly delineate between their roles as a community organiser: *"Well, they saw me as being part of the discussion I think, didn't they?"* On other occasions, they felt that they should be enforcing the rules more. Reflecting on their role during the sessions T3 was torn between being a facilitator, being a sense-maker of the data being collected, and the role of community leader:

"When people would go off on tangents that were maybe not to do with the question, I think I was probably a bit unsure about whether our role was to stop people doing that or whether it was to just let them go with the flow of the conversation […] In the back of my head, I was thinking, 'This is going to be difficult to organise at the end.'"

The facilitator, as well as thinking about the way the system was collecting data, was also aware of what particular prompts would be useful to the consultation. We observed how the facilitators would sometimes skip a prompt as they would deem it as not suitable for the consultation, and at other times brought a new prompt to the attention of everyone in a more enthusiastic way: *"this is a good one, move the marker to somewhere where there's anti-social behaviour"* (T3 during workshop). The role of *Ambit* in configuring the interaction, allowed the facilitator to be flexible and adapt to the participants. As discussed above, participants in some sessions ignored the rule of responding to a new prompt in favour of having something to say about the current prompt or location.

On occasions participants asked for more detail, and helped each other be clear on where they meant for example: *"would we say the beach bit of Carson, where the carpark is,*

or a little bit further along. So here where it gets really nice, is that where you're saying??" (P18). On other occasions participants built on the ideas or views of others or offered reasons for one another's' claims. One time when a participant was complaining about the condition of resident's gardens in a village another participant suggested it may not be for the reasons that the speaker was making: "*Do you think it might be because they can't manage their gardens?"* (P11). On very rare occasions, residents tried to override another participant's turn to speak. For example, referring to a past conversation from earlier in the session one participant encouraged another to change their decision: *"No! Now put it down by the school. We've already had a discussion about this"* (P15).

The idea of allowing residents to get on with things themselves without much interference from the facilitator or even the system was a recurring topic in our interviews. While it was acknowledged some groups thrived in more open-ended discussions, there was a concern that some groups may need the additional support that the prompt provided: *"I think if people can do that between themselves and kind of work through it, work it out, then I think that's really useful. Not all groups could do that probably though"* (T3). As well as offering ways for participants to have a quite open discussion and challenge each other, the system was valued for the way it could add support to those who required it. As such, the Trust members appreciated the way they could lean on the affordances of our system at times when participants required support, but could create a form of differentiation that gave other participants the space to have less structured discussions and debate.

Mediating and Passing On the Data

During the sessions, our partners at the Trust were aware of how data was being captured by *Ambit* and the effect this would have on the way the system could organise and present the data. Because of this, there were continual concerns around the value and validity of the data they would be collecting, and how they might be able to use this going forward. While there was strong support of collecting data pertaining to residents' experiences, over time there became a looming worry about how this large body of material would be made sense of. Over the course of the five sessions, the Trust collected ~5 hours of audio. In reflections after the workshops our collaborators discussed an initial will to reduce some of rich data to simple graphs and tables:

"There's a lot of duplication and we are kind of… I suppose what I'm trying to work out […] *you could go through it and you could pick out particular themes and you could say, "Right, this is mentioned once, this is mention five times." That's normally what you would do, isn't it? You would be looking to see the issues that a lot of people are bringing up and trying to draw that out of the information."* (T2)

T3 later went on to explain how they were tasked with going through all of the material and making sense of it through the *Ambit* post-event interface:

"Well, I started doing it first, so I did a spreadsheet because I use spreadsheets for everything and I just had all of the questions and the names of the groups along the top and I tried, basically, for each question, we just kind of- we didn't transcribe it word for word but jotted down notes from the discussion for each question. So it meant that you could then look at what each of the group said about the same question, kind of along…" (T3).

Notably, our tool that provided a quick overview of topics and locations discussed and associated audio was discarded in favour of a more in-depth and systematic approach. The Trust, and in particular T3, accepted that it was their role to make sense of the data that they receive in this way, and to ensure it was shared back to community members:

"My job would be to collate all the information into some kind of logical format. […] *We will* [then] *sit down as a partnership, so all of the residents that are involved, and probably have a couple of quite long sessions actually going through everything that's there and reading through all the information and discussing some of the stuff."* (T3).

It was also noteworthy that, despite this painstaking approach to looking through the generated data, there was no acknowledgement that the material required anything that may resemble a systematic approach to analysis. While it was important to format the collected data and ensure it was share, the Trust were always seeing the data captured as part of their wider longer-term consultation activities: *"I guess the information either supports or undermines proposals that we've received. It also helps us to say that there are gaps in the proposals."* (T3). The way our participants talked about their understanding of the community-generated data placed them in a role of a translator, between the ideas being proposed by local organisations for the spending of their money, and the articulated needs, wants and experiences of residents:

"I can look through this and there are some things in here that I know that project proposals we've got coming in would address. So there are issues around nothing for older young people to do and I know we've had some project proposals that would address some of that stuff." (T2)

This is not to say that the Trust only engaged in the data in a way that was driven by the existing proposals it had received, which would have just led to post-rationalisation to enable certain projects to be funded. The open-ended nature of the discussions opened multiple spaces for new conversations with proposers about what their projects could and should be, if adapted to the needs of the communities. Indeed, it was viewed that *Ambit* and the creation of such community-data presented an opportunity to open up a more collaborative relationship with the organisations bidding for funding: *"So we might have to go back to some people and say, "Actually, we would like you to sit down together and come up with a joint proposal."* (T3)

It was also acknowledged that in some cases, the issues articulated in the consultations were not under the Trusts remit. The open-ended nature of the discussion was that the Trust would hear matters of concern where the only action is to pass it on to someone else:

"Then, I can also say that there are some things in here that are either not our remit […] What we agreed at the meeting last night, one of our partnership members is a county councillor and a parish councillor. She said, "I'll have a look through this and I'll pick out the things that I think are either parish council or county council responsibilities and flag them up to you." Then there might be some of it that is just passing information onto people." (T1)

Action and Adaption

Once the consultation underpinned by *Ambit* was complete, our collaborators at the Trust articulated the various ways that the system, and the community data generated through it, had, and could in the future, shape their work. A key learning was the realisation for them that consultation was no longer seen to be existing in a specific timeframe, but would be a process that was ongoing. The open-endedness of this consultation was seen as a positive, primarily as it meant future consultations could be more focused and finer tuned: "*If there are pieces of work where we feel as though we need to get more information about it, we need to have more consultation on specific things."* (T2).

At the time of concluding our study however what those more focused consultations would be on was still open to debate within the Trust. The assumption was that future consultations would be focused on one of five specific themes (transport, health, environment, employment, or young people) that were determined at the formation of the Trust. Initially, when thinking about the kinds of actions the system resourced, T1 talked about using the data *Ambit* generated to delegate issues to the existing sub-groups within the Trust: *"In an ideal world, […] we have our different themes and theoretically, we have a task group for each theme. Just that snippet of information for that task group would be passed across to them and we could say, 'This is everything that was said in relation to transport.' Or, 'In relation to the environment.'"*

After listening to the community data, however, T3 had started questioning the validity and value in the thematic areas the Trust based their institutional practices, and the prompts in the workshops, around:

"I was actually tempted when I shared this with the partnership, to just take the themes out completely. I thought, "I don't know if that actually creates a framework that's not really there […] I don't know because I think when you listen to the recording, there's a lot of stuff that overlaps themes. When you look at the project proposals we're getting, they overlap a lot of themes as well."

When speaking in the final interview after the Trust had processed the new community data, T3 explained that the group fundamentally changed their approach to organising themselves and their funding allocation methods: *"We needed, in a way, to see what came from this and what came from the proposals to re-look at the themes."* For example, *"What's come out is that we don't have a theme that's specifically around health and wellbeing. We probably need one."*

Our system resourced actions for the Trust in various ways; as well as providing focus for future consultation, it created community-generated data that could be passed onto other agencies and be divided into actions for thematic taskforces within the Trust. More significantly, the data the system presented to the Trust had an impact on the way they structured themselves internally and their wider collaborative actions with external organisations.

DISCUSSION

In this study our civil society collaborators were concerned with processes of consultation and how this related to the outcomes expected by a funding body and their own intended outputs. This brought forth concerns about inclusion, and raised questions around ownership and sustainability. We discuss these issues in our concluding discussion sections.

Complexities of Creating Inclusive Civic Discourse

The ambition of our collaborators was to include citizens in conversations about the places they lived in, in an environment wherein those who participated displayed the qualities associated with a 'deliberative stance' [e.g. 63]. This is to say that they offered claims and reasons for their views, and were sensitive to the opinions of others. In our study, this took the shape of designing a public space where interaction is configured to foster a more controlled and structured form of dialogue. Previous work has looked to create the right conditions for deliberation, related to urban planning [47] and advocacy and efficacy around data [39,65], using game mechanics and simple design methods to promote turn-taking, foster mutual respect, and encourage reason-giving [46]. We built on this work to focus on what might render deliberative participation consequential, but this amplifies issues of inclusion.

In our sociodigital system, we addressed issues of inclusion as an instrumental challenge through utilising turn-taking and prompt cards within the process to mitigate dominating talk and the infiltration of pre-defined topics during the deliberation. The Trust felt our system gave appropriate support to some residents, and valued the way the engagement process supported by *Ambit* allowed them to build relationships with those previously excluded from town hall meetings (e.g. the youth group). However, the other side of inclusion is concerned with getting 'people in the room'. While the affordances of *Ambit* enabled to Trust to go to specific parts of the community, and listen to 'excluded' groups in their preferred social spaces, in a sense "conveying their own responsibility in closing the ownership of the distances between themselves […] and the residents whom they are representing" [20:5], we had to rely on our

collaborators at the Trust to use their own social networks. Despite *Ambit* offering 'something new' for residents to 'come and try' we found that the social capital required to convene residents was not always as we expected, echoing concerns identified in previous studies [1,48].

In addition, *Ambit* provided a means to conduct multiple asynchronous consultations, around a shared topic but in a structured yet open to be shaped manner, and enabled the Trust to collate and listen to community opinions. However, as with similar work [46,55] this this led to a mass of data our collaborators had to then deal with and subsequent issues around sense-making. In our study, the Trust used this data, not to directly inform decision-making but to form the basis of their own internal processes of discussion and deliberation. For example, this was apparent in the way they actioned future work and adjusted the way they collaborated with external organisations. This leaves questions around accountability and the extent to which claims of inclusion may be made when the consequences of that inclusion are not clear.

Taking Ownership and Giving Control

There are calls for researchers in HCI to be useful to people "on the ground" [2], tap into the local expertise, and fit into existing practices, with suggestions this is achieved by researchers developing plans together with partners [15,24]. Digital civics research prioritises supporting the existing practices of civil society organisations [55], to collaborate and assist rather than design *to* or *for* [9,70]. Handing over control of the consultation and configuration of a sociodigital system like *Ambit* raised questions during our study around what it means for civil society groups to be intermediaries and processors of community-generated data. It also poses challenges for the relationship between digital civics researchers and research partners. Le Dantec and Fox [24] have discussed creating *productive partnerships* highlighting the different perspectives the researcher must occupy throughout the research project (researcher, confidant, collaborator), and the need to develop research plans together with community partners, as ways to "work to keep the work going".

Previous research in HCI has indicated that handing over responsibility can lead to an increased sense of ownership [51]. In our study we found that certain actors within the Trust took a strong sense of ownership over not only their consultation but also the research study. As well as producing the prompts and setting up the system for their consultation, our collaborators actively sought to take ownership of many of the research protocols. The PEO was keen to use their organisations logos and re-write the information we provided, resulting in them taking the lead with participant information and consent procedures. Despite concerns within the research team about increasing the workload of our community partners, this seemed to have a positive effect; it helped develop a stronger relationship between the researchers and the Trust.

Clark et al. [15] have highlighted the *need* for design researchers to make constructive connections, develop mutual understanding, and generate mutual respect. In our collaboration, this strong relationship opened up the possibilities to promote a certain way of conducting community consultations. The Trust were increasingly more open to more experimental (to them) methods of engagement. This shines a light on the relationship between the research team and the community organisation. In some respects – in the name of sustainability of the technology – we designed *Ambit* in a way that allowed the researcher to take a step back from the day-to-day running of the study, from the way the system is set-up and configured, through the deployment, and then the review process. On one hand, this created a sense of ownership and a stronger relationship with our partner organisation; on the other hand, we faced several ethical questions, such as who owned the data. Issues of ownership, governance, and privacy are often at the forefront of digital civics work [e.g., 4,47]. For us, this was discussed throughout the study with our partners who despite being comfortable with the duality of outputs for the data (their consultation, our research study) had concerns over anonymity and privacy, and questions over the ways this effected what they could 'use' the data for outside of this consultation. Finally, this meant part of our role was to help the Trust understand basic legal and ethical procedures and develop their own practices and procedures around consent and data.

CONCLUSION

In this paper we have reported on the design, deployment and evaluation of *Ambit*, a sociodigital system to support civil society organisations to run their own deliberative consultation processes. To investigate how the practices of civil society may be both consequential and inclusive this paper has focused on the ways talk-based forms of participation may go beyond lowering the barriers to engagement to creating resources for action from community-generated data. In our findings we have highlighted the ways such technologies can support civil society as well as build the capacity, and also be a challenge for them. Finally, we have discussed the way *Ambit* was adopted and how the group adapted their practices, highlighting how our study interacted with issues of ownership and control and adds to a developing understanding of the role of the researcher in digital civics.

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