



Citizen Participation and ICT for Urban Development in Oslo

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INTRODUCTION

According to the UN, information and communications technology (ICT) design provides a catalyst for realising human rights and for successfully achieving the Sustainable Development Goals (SDGs) (Mansell & Wehn, 1998; Sachs et al., 2016; Seyfang & Smith, 2007; Tjoa & Tjoa, 2016). Implicit biases that influence design decisions can, where the diversity of the human experience is not taken into consideration, reinforce systemic forms of social disadvantage (Friedman & Nissenbaum, 1996; Kirkpatrick, 2020; Treviranus, 2017). This is considered to be indirect discrimination, from a human rights perspective (CRPD Committee, 2018; Lawson, 2008). Design decisions can therefore unintentionally create barriers that prevent or limit an individual's or group's ability to

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access or use ICT. These barriers have contributed to broader, social scale digital divides that segregate those who can easily access and use ICT from those who cannot (Datta et al., 2019; Goggin, 2016; Jackson et al., 2008; Ragnedda & Muschert, 2013, 2017). The UN has argued that universal design, which is a novel approach to creating ICT anchored in human rights, can help close these digital divides (UN, 2019; United Nations, 2006).

This chapter explores the role of ICT design, development and implementation as a mediator in citizen participation and urban development. The case study described in this chapter of citizen experiences in Oslo provides, however, a basis for examining the latent barriers and opportunities that ICT design for citizen participation can yield. Local authorities have adopted social media and other digital means to engage more citizens in the participatory process. There is, however, a lack of empirical research on this topic. This chapter, therefore, sheds light on the ways in which local municipalities can facilitate and manage the participatory process, and the role citizen ICT use can play in influencing policymaking in urban development.

A thematic analysis of in-depth qualitative data on the use of a new media channel for citizen participation in urban planning in Oslo is presented in this chapter. A heuristic analysis of one of the platforms is applied to further support the analysis and to provide insights into potential contradictory or complementary patterns. The chapter is therefore a response to the following research question: In what ways do citizens in Oslo experience barriers and opportunities using ICT to participate in urban planning?

UNIVERSAL DESIGN AND ACCESSIBILITY AS CATALYSTS FOR CITIZEN PARTICIPATION

The development and proliferation of ICT generally, and in web technologies specifically, has had the unintended effect of producing new and of exacerbating existing inequalities (Halford & Savage, 2010; Hickel, 2017; Ragnedda & Muschert, 2013). Digital divides, therefore, have emerged across almost every social identity and form of social disadvantage, including age, gender, socioeconomic status, disability, sexual orientation, and race. In this context, digital divide represents a form of social inequality in which privileged groups have access to and use ICT, while other socially disadvantaged groups do not. Developing new ICT,

therefore, provides the opportunity to mitigate or exacerbate this digital divide.

Universal design provides a means for informing design decisions, such that the experiences of marginalized groups are placed at the centre of the design process. Universal design calls for, according to the UN, “design of [ICT] to be usable by all people ...” (United Nations, 2006). Researchers and practitioners, when the principle was conceptualized in the 1990s, primarily applied universal design principles to architecture and learning environments (Mace, 1998; Mueller, 1998; Story, 1998, 2011). Recent research has, however, posed a theoretical framework for universal design that rearticulates the principles of universal design in the information society (Giannoumis, 2016; Giannoumis & Stein, 2019). This framework helps resolve the sometimes-conflicting principles of universal design, such that the integral role that ICT plays in realising human rights, including the right to participate in political processes, is accounted for.

Giannoumis and Stein (2019) argue that universal design consists of four overarching principles. These are social equality and non-discrimination, diversity and social disadvantage, ICT usability and accessibility, and participatory processes. This chapter uses these principles to examine the barriers and opportunities that citizens experience when accessing and using participatory platforms.

Universal design relates to user-centred design, the principal difference between the two being that the user is positioned, in user-centred design, at the centre of the design process, user needs and preferences therefore being prioritised (Ritter et al., 2014). Decisions are made, in user-centred design, based on the profiles of different user groups. These often do not, however, take fully into consideration the different forms of power, oppression and marginalisation that exist in society. User-centred design focusses on the active involvement of more general categories of users in design and testing processes. Research has shown that user-centred design is, despite these limitations, more effective at improving overall usability than traditional systems-centred approaches to product design and development (Mao et al., 2005). Usability, according to ISO, relates to whether a user can effectively, efficiently and satisfyingly use ICT (ISO, 2002, 2010).

Accessibility is a narrower articulation of universal design and focusses on the barriers and opportunities that persons with disabilities experience when attempting to access and use ICT. The UN refers to accessibility

as “the degree to which [ICT] is available to as many people as possible”, and goes on to state that “accessibility is often used to focus on [persons with disabilities]” (ITU, 2007). Accessibility, in other words, often focusses on the extent to which ICT is usable by persons with disabilities and by everyone. Accessibility is also often approached as a participatory process, with persons with disabilities being actively involved in decision-making during ICT design and development (Balcazar et al., 1998; Giannoumis & Stein, 2019; Simonsen & Robertson, 2012).

The design and development of ICT are, in this chapter, considered to play a key role in whether and to what extent marginalized communities can participate in urban development processes. Efforts to promote citizen participation through ICT therefore hinge on the adoption and implementation, by local authorities, of universal design principles and practices. Collaboration and co-production can provide effective mechanisms for promoting the inclusion of marginalized groups and are fundamental to the goals of citizen participation and the principles of universal design (Bovaird & Loeffler, 2012; Giannoumis & Stein, 2019). Public agencies must, therefore, if the benefits of citizen participation are to be leveraged, actively involve stakeholders in the co-creation of new media platforms (Ellin, 2012).

METHODOLOGY

A multimethod design that combines semi-structured interviews with heuristic analysis was, in this study, applied to the investigation and exploration of the salient themes around using ICT to promote citizen participation in urban development in Norway. A total of seven semi-structured interviews provided the basis for exploring citizen experiences. The interviews were conducted in Norwegian, translated into English, and open coded to classify and identify the themes emerging from the data. Each theme was then analysed in detail to interpret the meaningful view and the opinions provided by the results.

The contact information of the participants was extracted from local municipality websites. Participants were contacted via email, and personal interviews were arranged with three women and four men. The participants were aged between 35 and 55 and were asked a set of 12 open-ended questions. This included questions on their participation and feedback on their use of the *Si din mening* citizen participation website used by the city of Oslo. All participants provided their consent prior to

being interviewed. All of the participants used the *Si din mening* website. Only one respondent had, at the time of interview, used the platform recently. The remainder have used the platform in the last few years. Selection bias was observed, and the participants have been active users of the platform.

Due to the limitations of the interview data, the analysis must be interpreted with caution. There is a risk of over-interpreting the findings and every effort has been made not to overemphasize the meaning of the participants' statements. The data is weak due not only to the limited number of participants but the depth of the interview data. It did not provide a sufficient basis for reaching a point of saturation and the participants' statements often referred to hypothetical scenarios, beliefs or understandings about others' experiences rather than their own. Therefore, the findings should be interpreted as an initial basis for reflecting on the variety of potential mechanisms that may influence citizen participation.

A heuristic analysis of the *Si din mening* website was also conducted, to evaluate usability. Expert evaluators used a pre-defined set of criteria or principles to evaluate the quality of the user interface. The criteria focussed on a specific group of users in a given context of use (Casare et al., 2016; Orozco et al., 2016). The criteria for heuristic analysis were drawn from the Web Content Accessibility Guidelines 2.0 (WCAG), a long-accepted industry standard for web accessibility for persons with disabilities. This is considered to be the gold standard for evaluating website accessibility.

Two independent expert evaluators assessed the extent to which the *Si din mening* pages adhered to the WCAG criteria, and therefore the experiences of persons with disabilities when accessing and using key page functionalities. This includes when contributing new proposals and accessing existing proposals. Criteria that were assessed differently by the two evaluators were re-evaluated and a consensus was reached.

The evaluation focussed on three websites that are part of the *Si din mening* domain.¹ The expert assessors used guidelines 1.1.1, 1.3.3, 1.4, 2.1 and 2.3–4.1. All other guidelines were either not applicable, due to the types of content on the pages, or were considered indeterminate since the expert evaluators could not agree on a rating. Assessors graded the

¹ Source: *Si din mening*, platform: <https://innsyn.pbc.oslo.kommune.no/sidinmening/main.asp> (last accessed 15.07.2019).

websites as pass, partial pass or fail. Of the criteria assessed, one page² failed four criteria including 1.4.8 Visual Presentation, 2.1.1 Keyboard, 2.1.3 Keyboard (No Exception) and 2.4.8 Location. This means that while the website was largely accessible to persons with disabilities, some accessibility barriers remain such as being able to access the site using only a keyboard. Two of the three websites additionally failed criteria 3.1.1 Language of Page.³ This means that for these websites, the language of the page was not listed, which creates barriers for persons using screen reader software. Finally, all three pages failed 3.3.5 Help, which means that context-sensitive help was not available to the users. These criteria helped users avoid making mistakes. The heuristic analysis suggested that while the pages were largely accessible, some accessibility barriers remained.

BARRIERS AND OPPORTUNITIES FOR PROMOTING CITIZEN PARTICIPATION IN URBAN DEVELOPMENT

The results of the interviews revealed four key themes that contribute to citizen participation in urban development. First, the overall usage of technology and social media among participants was high, owing to the overall development of Norway and high levels of Internet access. Second, while the results revealed that the overall accessibility of usability of the *Si din mening* platform was high, barriers remain that may limit some groups from participating. Third, the levels of awareness, engagement and participation on the platform are key mediating factors that impact whether and the extent that citizens access and use the platform. Fourth, trust, privacy and government responsiveness may act as external barriers that further limit and prevent some groups from accessing and using the platform.

² Source: *Si din mening*, platform: <https://innsyn.pbe.oslo.kommune.no/sidinmening/abb.asp> (last accessed 15.07.2019).

³ Source: *Si din mening*, platform: <https://innsyn.pbe.oslo.kommune.no/sidinmening/main.asp?kid=opstart> (last accessed 15.07.2019).

TECHNOLOGY (ICT) AND SOCIAL MEDIA USAGE

The interview results suggested that respondents are active users of the internet and social media. One participant mentioned that they did not like the internet and were not very active on social media. Participant 7 responded that “I use the internet, but only when I can’t sleep”. Participant 2 said that they used the internet a number of hours each day, “[I am a] 360 degree internet user and probably use the internet more than a number of hours each day”. All participants were quite active internet users, using the internet every day for job-related and personal use. One participant expressed, however, a more conscientious approach to their use of the internet.

I try to have a conscious relationship with [it] I try to not use it too much because it [impacts my concentration] and makes me feel a little lost ... so I try to use common sense and use the internet for [things that] benefit me ... I like to use it for ... what I think is important and useful.

All the participants agreed that it’s easy to participate in government initiatives using digital media, as this does not require their physical presence at meetings, debates and discussions. Digital media allows them to express their concerns on neighbourhood issues from their home, the participants believing that technology makes participation easier. Participant 1 said “You can participate in issues from your home”. Participants were also of the opinion that information is easily accessible on the internet. Participant 4 stated that they were able to inform themselves about the work of their local welfare association through the internet, saying “[I learned about] what types of organizations exist, I go through [their] projects and get to know the strategy ... all the time”. Participant 1 emphasised that ICT allowed easy access to information, saying “...you get the combination of ... easy access to information but you also receive feedback [digitally]”. Participant 7 said that they stayed informed about politics and planning issues through the internet, saying “I ... have discovered both how incredible and easy it is to find information on ... political issues in the city council and ... on the centre of my district”.

The majority of respondents were positive to information being made accessible to everyone. Social media was a useful means of reminding people about digital urban development surveys, participant 1 emphasising that “easy access and ... feedback can be important”. Participant

2 stated the need for “everyone to have access”. Three participants said that they consider social media to be informative, but that it also contains a lot of fake news. Participant 3 said that “It does help, but at the same time ... fake news makes it more confusing as it is difficult to know what is important ...”. Participant 4 also commented that fake news can cause the eruption of disagreements between citizens.

The majority of respondents were of the opinion that digital platforms provide urban development with many opportunities and options. Citizens must, however, show an active interest in these platforms for these benefits to be realised. Participant 7 stated that “Through digital technology, there are very many opportunities ... to improve your opportunities to participate more actively in the community”.

This section argues that citizens who are active on social media use it to receive information on upcoming development projects. However, citizens often receive information on upcoming projects through physical meetings as well and use social media, after the meetings, to obtain more information and detailed plans.

Overall Accessibility and Usability of Participatory Platforms

All participants found the *Si din mening* platform easy to use. Participant 3 stated that it was. “Very easy to use”. Other participants confirmed, saying they found the website quick to use and that it was not difficult to access and operate. Participant 7 described their experience in detail. They said that the tool does not have many features, an aspect that makes submitting suggestions quick and the tool easy to use.

All respondents believed their parents and grandparents would find the platform very easy to access and use. Participant 7 said that their grandparents “...can use it without any problem”. Participant 1 further stated that although their grandparent was not digitally active, they could use the platform without any problem.

My grandmother is 92 years old. she is not digital. but my parents, who are in their mid-60s, had used it.

Participants 3 and 4 reflected that the tool was easy to use and that their parents would have no difficulty using the tool. This suggests that the city administration may have considered different age groups in the design of the platform. This is further supported by the relatively high

levels of conformance with the WCAG standards, as illustrated in the heuristic analysis. It suggests that government and planning authorities intended the platform to be used by a wide range of citizens. Two respondents reflected on the role of age in accessing the platform. Participant 7 suggested that young people and children play an important role in urban development.

The perspectives of children and young people on the neighbourhood may be a stronger driving force, and be more focussed on wanting to do something that matters.

Participant 6 also shared the opinion that younger people can have a totally different view on urban development. One of the participants mentioned that older persons may avoid using the platform. Participant 6 stated that there are many citizens/older people who think they will make mistakes if they try to use such digital tools, and are afraid of using them stating “They [older persons] are often very afraid of making mistakes”.

One of the participants noted that there was not much space for text and that this means that participation did not take much time. Participant 7 said that because there was no space for many words, giving feedback was quick. Participant 5 confirmed saying that there were not many functions and that the platform was therefore easy to use. “Easy to use. Just write the text and send. Did not have many functions”. Participant 2 said the same, that it did not take much time or many words to submit your opinion. “Little text and does not take much time to express your opinion”.

Two of the participants believed that participation can be affected by language barriers. Participant 7 commented that the language of the platform may lead to some people being reluctant to participate.

The most important barriers ... are linguistic and technical. It is quite easy to use. But the language [of the platform] that was more of a challenge.

This section argues that the participants generally considered the design of the platform to be user-friendly and can be used by participants of a range of ages. This is supported by the relatively high levels of accessibility illustrated by the heuristic analysis. It also suggests that Oslo city government has focussed attempts on encouraging a range of citizens to participate in development projects. However, the results additionally suggest that

potential barriers and opportunities may exist that can limit or enable citizen access to or use of participatory platforms. These go beyond compliance with international standards such as WCAG. The results suggest that the language used on the platform, which was supported by the heuristic analysis, fear of making mistakes or the need for high levels of digital skills can limit or prevent a citizen from accessing and using the platform. Conversely, platforms that include only a limited and select set of essential functions can enhance and promote access and use.

Awareness, Engagement and Participation

Some participants found the platform was not easy to find and that they were not interested in searching for it. Other participants supported this view, saying that many people are unaware that such portals exist. The participants further suggested that awareness of these portals is essential and that special initiatives should be implemented to increase citizen awareness. Participant 1 suggested that citizen awareness of such digital tools is low.

Many don't know that such platforms exist, and should be made aware of them. This could also increase the number of politically active citizens. People don't know about such platforms.

Others stated that some people may believe the platform is difficult to use, which can keep them from adopting the platform in the first place. Participant 2 believed that there are many citizens who feel that such digital tools are technically complicated and that they won't be interested in using them.

The participants noted that participation on the platform was low and that government and local authorities should devise measures to increase participation. Two participants who knew and had experience with the planning process were aware that only a small group of people participated. They argued that more people should be encouraged to participate through digital platforms and that advertisements on social media could be used as a means to promote awareness. Participant 4 pointed out that "Only a very small group of people express their opinion" and that there is a need for increasing citizen enthusiasm. Participant 6 suggested that the government should take action to improve awareness. "You

need to improve opportunities to participate more actively in the local community”.

The results also suggested the need for new measures to stimulate citizen interest in participating in urban development. Participant 2 mentioned that the internet can be easily accessed by most citizens, and therefore social media should be used to increase interest and engagement. Participant 3 said that citizens will submit suggestions or ideas to development plans if they are interested in what is going on around them. “Interest grows when you start getting involved”.

However, one participant argued that many people feel that understanding the details of a project requires a lot of time and energy. Participant 1 said that this could be improved by providing succinct summaries and bulleted lists that citizens can quickly read through and give their feedback. “Better at giving a small amount of information and bullet points, instead of this mass of paperwork”.

Participant 3 was very satisfied after participation and was glad they took part in the surveys. “It’s good to say what you feel. I could express my opinion on the development”. Participant 2 was motivated and said that they would submit suggestions and opinions on other close neighbourhood issues.

The feeling of sharing your thoughts is very important to me, particularly on your neighbourhood.

Participant 1 also stated that they were motivated to continue to stay informed, participate and make suggestions on immediate neighbourhood issues.

It is important that we, as inhabitants, have the opportunity to participate and help shape the city. This is, however, also about local democracy. That is why I continue to use it, as I think that it can help lead Norway.

Participant 7 also experienced a positive effect of participation. They were more enthusiastic and more motivated to participate in the future. “It has had quite a few positive effects for me, and I have become more politically engaged”. Four respondents were excited and eager to participate more. Participant 4 wanted to participate in the development of their own city/country.

It is important that we, as inhabitants, have the opportunity to participate and help shape the city. This is, however, also about local democracy. That is why I continue to use it, as I think that it can help lead Norway.

Participant 5 also believed that such digital tools should be used more often and participation must therefore be encouraged. Participant 2 also stated that citizens must access such platforms and participate more often. Participant 7 suggested that they will be using such a tool not only for development plans but also for other issues such as politics.

I could have been more active, more engaged in planning and development issues, political issues. I think I will use this more often, and will also engage in other issues.

Two of the participants believed that participation is about local democracy and that everyone should therefore share what they feel about an issue and raise questions if they have them. Participant 7 said that participation, more generally, led to knowing the neighbourhood and neighbours better. “I became better acquainted with my neighbourhood and with many people in my neighbourhood”. Participant 2 was also positive about digital tools, as they kept them informed about what’s going on across the city. “That is the next stage, to help us know what is going on”. Participant 4 was quite positive after reading the suggestions of citizens and believed that suggestions can help the better development of the city.

We have urban developer groups on Facebook ... So other people’s opinions are there right in front of you. It’s interesting and positive to read them.

Participant 4 also thought that communication with the public is very important and that citizens should be encouraged to participate in development programmes.

This section suggests that external factors, including awareness and engagement, can affect the overall levels of access and use as well as the opportunities for participation. The results largely illustrated that increasing awareness about the platform and the ways in which it can be used to participate in urban development projects can help empower citizens and promote democracy. The results also suggested that efforts to

promote engagement and cultivate interest in political participation can improve access and use, and as a result, contribute to improving urban development initiatives.

Trust, Privacy and Responsiveness

All the participants considered trust and confidence in the government as a key driver of using the platform. One participant mentioned that many people are sceptical about the authenticity of participatory platforms, which makes it hard to trust and invest time into using them. Participant 4 said that people sometimes think that such platforms, when advertised on social media, look like scams. “Sometimes I think if the platform was real, would it really be advertised on Facebook”.

Some participants reflected on the issues related to privacy and security. Participant 2 recalled that the security code generator, which was required to login, may be a barrier for some users.

You need to login and authenticate. Use netbank to login. [Some] people may not be able to use it very easily.

Another participant expressed concerns about anonymity. They argued that exposing an individual’s political opinions would be ethically wrong. Participant 7 agreed, pointing out that survey submissions that include personal information can represent a privacy concern. “If personal information is saved and you are singled out for what you say, then it’s wrong” Local authorities must therefore ensure that surveys are anonymous and that they inform participants of their privacy rights.

Three of the participants expected some form of feedback after submitting their opinion—e.g., an email saying that their suggestion is important and will be considered. Participant 5 also pointed out that not getting feedback can result in lower citizen satisfaction with such tools. According to the participant, they were left with the impression that their suggestion or idea is not important, and so considered not participating further. Participant 6 suggested that providing feedback can improve citizen satisfaction and encourage more participation and interaction.

Not just feedback that says ‘we take note and thank you for the input’. But real dialogue on the issue.

One respondent mentioned that one barrier to participation may be that administrators do not have the power to respond to their opinions on urban development issues. Participant 6 pointed out that “They [public administrators] hardly ever have the capability to answer the questions you ask”.

Participant 6 mentioned that such platforms encourage two-way communication, and make it easier for citizens to connect with political parties and planning departments. All participants were very satisfied with the platform after having shared their thoughts on a development in their neighbourhood. Four participants mentioned that their voice had been heard by the local municipality and that they believe this had a positive effect on their surroundings. Participant 5 stated that they were satisfied after their opinion had been heard.

My opinion was taken into consideration. Oslo Municipality receives the information they need to make decisions that are based on what the population thinks.

This section suggests that citizen perspectives on trust, privacy and the responsiveness of the public administration mediate whether they are willing to access or use participatory platforms and to what extent. Trust in government was specifically cited as a key consideration when using the platform. It may also extend to broader issues around ownership of personal data. Privacy was cited as a consideration in relation to political opinion, as well as barriers that may result from the design of secure authentication methods. Finally, citizens’ perspectives on the responsiveness of the city administration and the extent the platform provides automated feedback that acknowledges the value of citizens’ contributions, showcases another key consideration in understanding the barriers and opportunities to access and use of ICT.

DISCUSSION

This chapter provides some initial evidence that citizens in Oslo experience a variety of barriers and opportunities to use ICT for participating in urban planning. Citizens in Oslo benefit from relatively widespread adoption of the internet and ICT in general. Public administrators involved in designing the *Si din mening* platform appear to have considered a broad

range of stakeholders and have ensured a relatively high level of accessibility and usability of the platform as indicated by the heuristic analysis. However, as the heuristic analysis further supports, some barriers and limitations remain. It revealed limitations in terms of the user's ability to navigate, adjust the visual presentation of the website and receive context-sensitive help. Further, the interviews suggested that issues such as language—which was also supported by the heuristic analysis—, digital skills and fear of technical complexity limit the extent of citizen access and use of the platform. External considerations, including awareness and engagement, have also acted to limit participation and conversely may be key opportunities to improve participation and enhance democracy. Finally, mediating factors including trust, privacy and the responsiveness of city administrators may further affect citizens' experiences of accessing and using the platform. These considerations may contravene attempts by city administrators to promote participation and provide an opportunity to consider the relationship between participation and broader social issues.

The results of this chapter have largely confirmed research that shows that ICT provides a mechanism for replicating existing participation structures in urban development projects (Nam, 2012). High levels of internet access and ICT use in Norway have contributed to opportunities to access and use the *Si din mening* platform. However, the results also extend this research by illustrating the value of digital channels for participation. This chapter argues that hybrid approaches to participation that utilise non-digital channels—e.g., physical meetings—in conjunction with digital channels—e.g., social media—may provide an effective means for citizens to exchange knowledge and coordinate participation efforts.

This chapter has also extended research on universal design and accessibility, by showcasing factors that influence whether and to what extent users can access or use the platform, and which go beyond user interface design (Giannoumis & Stein, 2019). The results revealed that the platform was broadly accessible by a wide range of users and usable by everyone. However, the platform's content, and specifically the language that is used, may impact the usability of the platform. This has, to a certain extent, been shown in previous research (Boldyreff et al., 2001), and may in part contribute to general fears and concerns about the technical complexity of the platform, and relate to users' digital skills and self-efficacy. These barriers may overcome where platform designers focus on a limited set of essential functions. Essentially by focussing on the

minimum set of functions and features necessary for effectively using the platform. This enables users to more efficiently use the platform and, according to the results of the chapter, suggests that users may also have a more satisfying experience.

Further, this chapter has illustrated the external considerations, beyond the design of the platform, such as awareness and engagement, that can affect participation. The literature on universal design and ICT accessibility focusses on access and use. It has, however, yet to fully consider the external factors that may contribute to specific access and use outcomes. This chapter argues that though these issues may not be core to the universal and accessibility, they may nonetheless provide useful catalysts for increasing ICT adoption. These factors can, in the case of participatory platforms for urban development, help empower citizens and promote democracy when leveraged effectively to promote engagement and cultivate interest.

Finally, trust, privacy and responsiveness are some of the most compelling considerations in universal design and ICT accessibility research. This chapter argues that these factors can mediate access and use and that a lack of trust in the platform owner, operator or parties who may have access to the user's personal data may lead to self-exclusion, and constitute a social barrier that prevents access to the platform. Trust also relates to information privacy and security. Research in ICT accessibility has considered security and privacy features and functions to be potential access and use barriers. This chapter confirms that these are relevant considerations (Lazar et al., 2017; Nissenbaum, 2011). However, research in universal design and ICT accessibility has principally focussed on user interface design. This chapter extends previous research and argues that design barriers extend beyond the user interface, and argues that the responsiveness of city administrators is a service design consideration. Furthermore, by considering design to be a broader approach to creating not only user interfaces but also aspects of systems, policy, organisation, product and service design extends research.

CONCLUSION

This chapter has investigated the experiences of citizens in Oslo when using ICT to participate in urban development projects. The results illustrate that citizen participation is a complex phenomenon with a variety of potential factors that influence whether, how, and to what extent ICT

may provide an effective solution for political participation. City administrators could usefully consider the broader social issues that have been suggested as affecting participation. First, they could promote awareness of and engagement with platforms. Second, they could consider ways to promote the platforms that enhance trust and preserve citizens' right to privacy. Third, they could consider broader aspects of design, including the city administrative system, policies that aim to promote active participation, the organisation of the local government and the services that are intended to support participation.

Caution, however, should be exercised in over-interpreting the findings as the limitations of the data are notable. The data is weak due to the limited number of participants, and the depth of the interview data did not provide a sufficient basis for reaching a point of saturation. Many of the participants' statements referred to their hypothetical beliefs or understanding about others' experiences rather than their own experiences. Therefore, the findings may only act as a basis for considering more fully the mechanisms that influence citizen participation.

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