

Leveraging Technology as a Community Engagement Strategy
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Executive Summary

The purpose of this paper is to explore how technology can be incorporated into traditional community engagement to increase the number of people who are engaged. The paper outlines what community engagement is, how society is changing toward more digital interaction, and who is left behind through these changes. Case studies of engagement in New York City, Chicago, and Minnesota are used to show how technology can be easily intertwined with traditional public participation. General ways of incorporating digital engagement into community engagement are suggested based upon traditional community engagement strategies. Lastly, using Atlanta as a case study, recommendations are provided for how technology can be incorporated into the Neighborhood Planning Unit System.

When engaging with communities, local government and organizations should go where people are already congregating, whether physically or digitally. If a large community of people is already present on a certain social media platform, go to them and engage there. There is no need to reinvent the wheel when seeking participation from community members. Though the use of technology can bring more people to the figurative table, the digital divide can prevent traditionally underrepresented communities from having a voice. Moving forward, community engagement strategies should consider how to reach those people who are missed in traditional community engagement and digital engagement, including communities who are underrepresented and marginalized.

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Introduction and Intent

The purpose of this paper is to explore community engagement in the face of community change as facilitated by advances in technology and how planners in all sectors should consider adjusting the ways community participation is facilitated as society changes and relies more heavily on technology and social media to engage with others, civically or not. This paper will explore several case studies of tech-led engagement within community planning, and it will examine how technology can better be incorporated into traditional community engagement. The overall research question is: “what are some ways for community engagement to incorporate present technology?” One of the culminations of this paper will be to provide recommendations for a current case study in Atlanta, hopefully helping the city’s Neighborhood Planning Unit (NPU) system embrace technology-led strategies within its current engagement strategies to reach a changing society. This will help to apply what has been explored in this paper to a current public engagement project.

First, this paper will outline some of the background of community and community engagement, how society is changing toward technology-based interactions, who is being left behind by such changes, and lastly, discuss technology-based community engagement and suggested best practices. Then, case studies of technology being incorporated into traditional community engagement will be showcased while evaluating how digital engagement strategies can be more broadly applied to other projects and other community contexts. Lastly, recommendations will be given for how Atlanta can incorporate technology-led community engagement into its neighborhood-level planning system.

Literature Review

Community Defined

Community, as a term, is ambiguous and “value-laden,” often allowing the perception that there is *one* set of opinions and identity within a geographical area (Head, 2007). The term “community” can often be reductive of the people and perspectives that are a part of the group, yet the

term continues to be used for its symbology. This is not to suggest that the term “community” should be excluded from literature, but that there should be greater evaluation when viewing community, knowing that not all people of a community believe or want the same outcomes and that one person in a community cannot be fully representative for all others who are considered a peer. These community lines are often defined by three factors: geography, interaction, and identity, though recognition should be given to the differences which still exist within established communities (Bowen, Newenham-Kahindi & Herremans, 2010). The idea of community has been used to group those who have the same geography and perceived identity together, and this grouping has allowed official entities to receive endorsement from one voice in the community without receiving endorsement from others. Community can create the illusion that one voice is the voice of many when it is probable that this one voice is the loudest and stands out from the crowd. When viewing community in this light, it is difficult to truly understand the differences of opinion residing in the same community from an outsider’s perspective.

The origins of community engagement derive from liberal-democracy, specifically the idea of “active citizens” who participate in decision making through policy institutions (Head, 2007). In the early 20th century, domestic and local governmental decision-making often addressed the wants and needs of “organized elites,” but in the past several decades, governmental processes have begun to include “broad constituencies and disadvantaged groups” (Head, 2007). Governmental entities sought the voice of the individuals who lived in their cities instead of relying on the voices of the elite, or the educated, for choices in decision-making. To achieve this, governments turned toward neighborhoods, as they are often “the most recognizable and viable units of identity and actions to provide” alternatives that can work for a neighborhood (Park & Rogers, 2014).

In some ways, community engagement has become a formality mandated by local, state, and federal governments. Not all public engagement is created equally as noted by Arnstein’s ladder, which shows fundamentally different levels of community engagement. Some engagement can be an

“empty ritual of participation” where there is no “redistribution of power” leading to a “frustrating process for the powerless” (Arnstein, 1969). The purpose of public engagement is not to be perfunctory; the purpose is to empower the public to change a policy’s outcome. Arnstein establishes a typology of public participation with eight levels: manipulation, therapy, informing, consultation, placation, partnership, delegated power, and, last, citizen control. These levels are split into three categories of engagement with the lowest being nonparticipation, the middle rungs being tokenism, and the highest rungs being citizen power. Many forms of the public engagement fall in the middle rungs where people are informed and consulted without allowing higher levels of participation, such as delegation or citizen control.

The main form of engagement is public meetings held at times that may or may not be convenient for America’s working class (weekday evenings), resulting in a one-sided engagement process that represents only a portion of residents. Community participation “is effective as a mechanism for creating and reinforcing NIMBYism (not in my backyard) and the accompanying restrictive zoning and land use policies” (Florida, 2018). Those who are fortunate enough to be able to attend public meetings in the middle of the day or those who are able to obtain childcare (or do not need it at all) for evening meetings are some of those whose voices are heard. Many in our communities are not able to attend public meetings because they work standard work hours (9am-5pm) or have shift-work which changes their daily schedule. These individuals have different perspectives than those who generally attend meetings with meeting participants being “unrepresentative of the broader public” by being “more likely to be older, male, longtime residents, voters in local elections and homeowners” (Einstein, Palmer, & Glick, 2018). The public who shows up to participate includes “repeat participators” whose voices are being heard at a greater rate than other members of the community resulting in decision-makers hearing skewed perspectives of those who generally oppose change and development, also known as NIMBYers (Einstein, Palmer, & Glick, 2018).

Engagement through Co-Production & Co-Creation

Innovations in community engagement can be seen in changes of framing, such as in the ideals of co-production and co-creation. Community engagement is incredibly important for the ideal “build with, not for,” an ideal that has origins in co-creation and co-production (Watson, 2014). Just a few decades ago, the public sector often acted on behalf of the community “in the public interest,” but now these actions within the public sector take into account what is valued by service users and citizens, allowing the voice of community members to be heard (Bovaird & Loeffler, 2012). This change in how citizens are viewed is seen in co-creation and co-production where citizens are collaborators instead of only service users. Co-creation and co-production are strengths of public engagement that introduce a healthy discussion around civic issues. Moving toward co-creation and co-production will mean adding new voices to the mix deciding how cities and communities develop and will require additional efforts to reach people where they are. This may include adapting to a changing way of engaging with members of one’s community. Changes in society and ways to adjust engagement will be discussed further, here.

Changing Engagement in the Digital Age

The newer generations of Americans (Millennials, Generation Z) rely more solidly on technology as their main form of engagement with the world, and the “nature and scope of participation affect the quality of [America’s] democracy” as more traditional forms of public participation and community engagement become less effective at reaching younger generations (Zukin, et al., 2006). In their book, Zukin and his co-authors continue to argue that these changes can be seen in a different range of public activities that vary from previous generations, including engaging through media, face-to-face interactions, and adjusting consumer behavior as a form of protestation. It is likely that these changes in public participation and engagement are caused by generational replacement, meaning older generations are replaced by younger generations, as well as increased

understanding and usage of technology. To stay connected with the voice of the community as communities and citizens change, a new form of community engagement will need to meet these communities where they are, in the digital age.

A survey conducted by Pew Research investigated technology-based engagement, especially through social media, and offline civic participation. The survey was conducted in 2012, and social media usage has only increased in those intervening years, so it can be assumed that the findings are even more pronounced now than then (Perrin & Anderson, 2019). The survey found that political activity on social networking sites has grown from 2008 to 2012 (and beyond, as can be assumed), and with these positive changes, there have been increases in the percentage of users who are civically engaged on social media through posting political content, following political candidates, posting political news, and joining politically motivated groups online (Smith, 2013). Through advancements and changes in technology and generational replacement, more people are engaging through social media, including in a political and civic manner.

Digital Engagement

Research shows that digital engagement tends to happen in two different forms. First, there is information dissemination through the use of websites, newsletters, targeted emails, and social media bursts (Mandarano & Meenar, 2015). Second, there are two-way information exchanges like online surveys, online stakeholder votes, and general digital discussions (Mandarano & Meenar, 2015). Technology is currently being used for community engagement in basic ways, such as through survey deployment, newsletters, streaming public meetings to allow “attendance” by those at home, social media outlets (Facebook, Instagram, or Twitter), voting online to provide input, and even the creation of RSS feeds (Locantore, 2014). In different contexts, technology is being used for public participation in more advanced ways, such as digital storytelling, community engagement games, hands-on technology (using technology in face-to-face settings), and crowd-sourced digital mapping (Place

Matters, 2014). As technology advances and as communities become more familiar with technology, these types of outreach are likely to become more mainstream. Mandarano and Meenar identify the most frequently used forms of digital engagement through case study analysis. These forms are websites, social media, stakeholder voting, online surveys, blogs, photo-video sharing, scenario planning / visioning, virtual meetings, wiki creations, smartphone applications, interactive mapping, and virtual tours (Mandarano & Meenar, 2015). These forms of digital engagement range in usage from most often used (websites) to least often used (virtual tours) according to their analysis.

Who is being reached?

Just as traditional community engagement (public meetings or canvassing) does not reach all sections of a community, technology-based community engagement also has its deficiencies. Traditional community engagement has been charged with missing populations such as low-income communities, people of color, immigrants, people who are not native English speakers, and youth, and this gap in engagement has been attributed to lack of capacity, financially and by staff, to negative associations and distrust of the government, to lack of language skills, and to not knowing when opportunities to engage occur (Locantore, 2014). Technology-based community engagement may miss populations which are included in the “digital divide:” those who do not have technological aptitude, those who do not have access to the internet or mobile phones, those who are vulnerable economically, and the elderly (Harkness, 2013). As of early 2019, ten percent of Americans do not use the internet, which is associated with certain demographics, including age, education, income, race, and community type (Anderson, Perrin, Jiang, & Kumar, 2019). More specifically, households with lower income, lower educational attainment, and those who live in rural areas are less likely to use the internet. Race also plays a factor, with fifteen percent of African Americans not using the internet compared to eight percent of Caucasians who do not (Anderson, Perrin, Jiang, & Kumar, 2019). Though ten percent of America’s population is still abstaining from using the internet, this percentage is drastically lower

than twenty years ago (48% in 2000) (Anderson, Perrin, Jiang, & Kumar, 2019). Relying solely on technology for community engagement, these vulnerable populations will be left out of the conversations which affect the decisions made in their communities. However, if technology is brought in to enhance traditional community engagement strategies, in an effective way, then planning and development entities have the opportunity to bring more voices and especially the underrepresented to the table.

Best Practices in Digital Engagement

To bring new and underrepresented voices to the table, public and private entities must hasten finding what is most effective in the context of their communities, which will depend upon demographics and the type of community. Best practices for technology in community engagement are both specific to the community being worked with and general to all communities. The most important characteristic of technology-led community engagement is meeting the community where it is, seeking where the individuals of the community are already interacting with technology (Place Matters, 2014). This is likely on social media, whether Facebook or Twitter, but it may be another phone application which is present in the community because of other factors (e.g., applications already being used for interaction between teachers and parents in K-12 schools). To ensure that the target population will be reached through the chosen engagement technology, it is important for members of the target population to weigh in on tool development, such as what applications are used, what add-ons are created, and how the data received is used.

Another best practice for using technology in engagement is to use visual communication to help overcome language and educational differences, and for those technologies which may be more complicated, the provision of technological assistance on-site will ease some of the confusion or difficulty (Place Matters, 2014). Maximizing on the benefits of many tools allows the creation of a technology toolkit that will be far more effective and allows the engaging organization to be more

strategic based on the needs of the project (Place Matters, 2014; MetroQuest, 2016). For example, combine social media with voting or surveys to broaden engagement of the community. Officials and community organizations should be partnering to bring about these engagement efforts to take advantage of existing relationships and social networks. Lastly, but importantly, decision makers and planners implementing the changes that community members indicate are important during engagement is incredibly necessary and important, especially those proposed by people who are underrepresented or distrustful of the government, otherwise these communities may discontinue putting forth their ideas. Technological engagement should be seen as an uplifting and partnering tool for face-to-face interaction and not as replacing all face-to-face community engagement. Using these best practices for technological engagement can allow communities to be engaged where they currently function, while increasing the effectiveness of the practices. Technological engagement should be seen as an enhancement for traditional engagement.

Background for Local Case Study on Atlanta's Neighborhood Planning Unit System

What better place to apply these strategies than through a case study in the Atlanta laboratory? By exploring the ways that Atlanta's NPU system can incorporate technology into its community engagement and planning, we can see, in practice, how tech-led engagement strategies can easily fit into existing community engagement structures. Here, background on the neighborhood-level planning system will be given to illuminate potential changes for the future. We will also see other tech-led engagement strategies in practice through case studies further in the paper.

Prior to the movement toward neighborhood-level planning, much of the planning done in American cities was done by the elite (the government, those in power). However, in the mid-1970s, this changed through a movement throughout the country. In Atlanta, the government opened decision making and began to include groups outside of the political elite by establishing neighborhood-level planning to allow the insight of the neighborhoods to inform potential projects and changes.

Neighborhood-based planning was incorporated into Atlanta's charter in 1974 by requiring citizens to be involved in the planning process (Neighborhood Planning Division of the Bureau of Planning, 1975). The mandate created the NPU system which still exists today, defined community, and created the boundaries of NPUs (Neighborhood Planning Division of the Bureau of Planning, 1975). Here, the lines are drawn by the City of Atlanta, and community is defined primarily by location, through the boundaries of the neighborhoods, taking into account the differences in identity among neighborhoods. The NPU system was established to allow community members to weigh in on decisions around zoning, licensing, and planning (Stone, 1989). This change in Atlanta's charter was an "indication of an innovation-minded city hall," and throughout the 1970s, the neighborhood movement "made itself a formidable political force" though it lost some of its clout through the 1980s (Stone, 1989). The neighborhood-based political system was able to be "more responsive to local influences" because the neighborhood members could engage peers more easily from the inside compared to engagement from the top-down (Parks & Rogers, 2014). A study in 2017 shows that mayors see neighborhood meetings as one of the best ways to hear from their constituents, and governmental entities, more broadly, view neighborhood meetings "as a critical component of community engagement (Einstein, Palmer, & Glick, 2018). Neighborhood meetings, in theory, provide civic participation from underrepresented groups and are essential to a representative democracy.

Atlanta was not the only city to establish a form of neighborhood-level planning, and in many cities, the 1970s saw an expansion of similar systems, though the systems are known by different names. Cities like Austin, TX, Denver, CO, Portland, OR, St. Paul, MN, Minneapolis, MN, and Washington, D.C. saw the rise of neighborhood-based planning systems, similar to Atlanta's (City of Minneapolis, 2017). Atlanta's neighborhood-level planning system will be further discussed in the Atlanta Case Study in the Discussion section where we will provide recommendations for how technology can be incorporated moving forward.

Methodology

This paper relies on case study analysis to explore ways of incorporating technology into community engagement. The case studies were selected based upon the types of technology used and the type of public participation. The author created a table showing different types of community engagement and potential ways to use technology to increase public participation (see Discussion section). It is important to show varied case studies by geographic location and by types of technology, so the audience can see how easily accessible technology can be. Next, the lessons learned from the case studies and literature review will inform the Atlanta NPU case study, and recommendations for local policy makers and planners will be provided. These recommendations can apply to planners anywhere, and the conclusion section will show implications for overall planning and policy.

Results: Case Studies of Incorporating Technology into Community Engagement

Case Study: Parks Without Borders, NYC Parks, New York City, NY

The New York City Department of Parks and Recreation, also called “NYC Parks,” is the governmental department responsible for maintaining the city’s open space and greenspace. The mission of NYC Parks is “to plan resilient and sustainable parks, public spaces, and recreational amenities, build a park system for present and future generations, and care for parks and public spaces” (Vision and Mission, n.d.). The mission of the department is centered around four interconnected priorities: equity, planning and placemaking, innovation and technology, and caring for parks (Silver, 2017).

The priorities of equity and caring for parks seek to engage more and diverse groups of people who would not normally be engaged in traditional community engagement. The planning and placemaking priorities seek to build new experiences and engagement opportunities for residents and those who use the city’s parks. The most obvious priority which relates to technology within community engagement is the innovation and technology priority, which uses data-driven approaches

to reach new stakeholders and helps streamline decision making. This has been achieved through the creation of online tools and social media engagement, making ideas easier to share and making conversations between the public and government officials more attainable. According to a 2017 report, over 50,000 people engaged with NYC Parks on Instagram, 87,000 on Facebook, 151,000 on Twitter, and over 21,000 people on Periscope, a live stream engagement tool (Silver, 2017). In addition, the NYC Parks department head is active on social media. Through engaging more stakeholders in a variety of ways, both traditional and more outside-the-box, the NYC Parks system has become a more equitable and fulfilling space for all residents of the city.

Parks Without Borders is an initiative to improve parks to be more open and accessible within the city of New York by improving entrances, edges of parks, and park-adjacent spaces (Parks Without Borders, n.d.). This initiative pledges to make entrances to parks more welcoming, make the edges of parks greener, increase programming, and add amenities and furniture. Mayor Bill de Blasio dedicated \$50 million to the Parks Without Borders initiative. NYC Parks asked residents of the city to provide feedback to the parks department regarding what parks in their neighborhoods should be improved through the Parks Without Borders design approach, and this feedback was collected through online surveys on an interactive website and in-person meetings and presentations regarding design ideas. During the three month period of open comment, 37 public meetings were held, and other meetings were held to brief community boards and elected officials. Parks Without Borders had a comment period of three months to receive feedback from the community, and during this time 6,176 votes suggesting improvements in 692 parks, more than a third of the parks and playgrounds in New York City, were received from the city's residents (Parks Without Borders Showcase Projects, n.d.; Silver, 2017). From these nominated parks, eight parks which had the most community support and had the correct physical conditions for the design changes were selected for improvements. These parks are spread throughout the NYC park system (Image 1) and are beneficial for a wide variety of communities and neighborhoods, and these capital improvements are currently being enacted. Moving

forward, the design changes will be applied as improvements are being done to other parks in NYC, including renovations at over 50 other parks in the coming years (Silver, 2017).

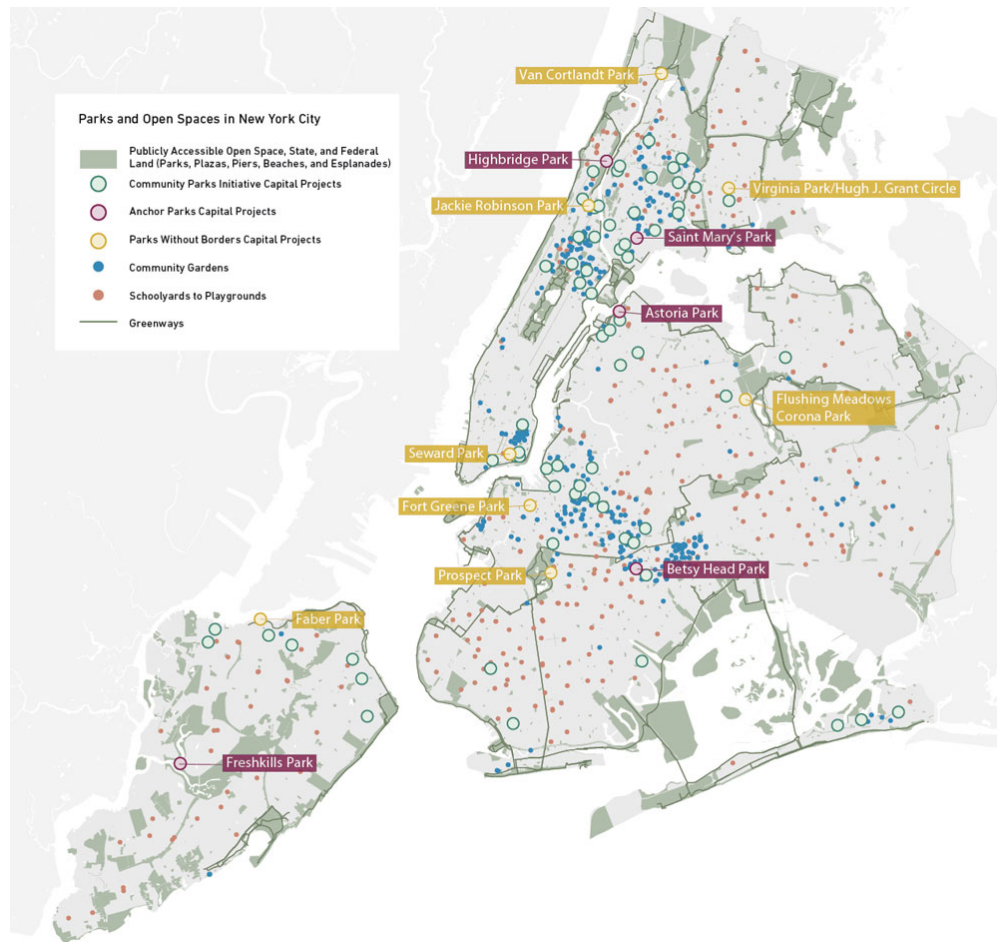


Image 1 – The distribution of Parks Without Borders Capital Projects (yellow) throughout New York City (The Plan for a Strong and Just City, n.d.).

How and why did the NYC parks and recreation team implement this initiative? The Parks Without Borders initiative used traditional and newer forms of community engagement, including public, in-person meetings as well as online-based engagement through surveys and social media. To NYC Parks, engaging and rebuilding relationships with diverse communities in the city is incredibly important. While engagement through face-to-face interactions will often be the best for building relationships with communities, more people can be engaged through online tools and social media (J. Graeff, personal communication, January 9, 2020).

Case Study: Participatory Budgeting by the City of Chicago

Residents of Chicago have been weighing in on city budgets through participatory budgeting since 2009 when Chicago's 49th Ward held the first participatory budgeting vote in the United States (Participating Budgeting, n.d.). Though this is a new process in the United States, participatory budgeting has been used in Brazil since the 1980s (Participatory Budgeting, n.d.). In the northern neighborhoods where it originated in Chicago, this budget was mostly used to decide the annual allocations of funding within the 49th Ward. The budget's funding mostly went to community improvements like repairing roads, sidewalks, and alleys, installing safer lighting on streets, and public playgrounds (Lydersen, 2017).

Since 2009, participatory budgeting has spread through the different wards and neighborhoods, and recently the City of Chicago has expanded the budgeting conversation to the city's entire budget. When the 2020 City Budget was being decided, Mayor Lori E. Lightfoot and her team had town hall meetings which drew 230 public testimonials and 2,600 residents, elected officials, and other stakeholders who provided their perspectives on the budget (Mayor Lightfoot and City Budget Team Announce Results of 2020 Budget Survey and Town Hall Meetings, 2019). In conjunction with the town hall meetings, the mayor's budget team also launched "a first-ever public survey to encourage the maximum level of engagement" (Mayor Lightfoot and City Budget Team Announce Results of 2020 Budget Survey and Town Hall Meetings, 2019). Mayor Lightfoot sought out feedback on the budget beyond normal town meetings because she and her team felt that a survey (or other digital tool) was the best opportunity to hear from different communities to allow the budget to be spent equitably among communities. Residents feel that they are more empowered and less marginalized when they are able to weigh in on how budgeting decisions are made in the city (Lydersen, 2017).

The online survey was straightforward and asked for feedback on budget items, and the survey allowed for respondents to indicate areas of the budget that could be reduced, maintained, or increased. The survey also asked for respondents to allocate funding among different programs based on their

preferences and ideas of importance. The online survey received feedback for seven weeks, and the city's budget team received 7,347 responses with 4,235 written comments with concerns or ideas for the 2020 budget.



Image 2 – These are ideas from a participatory budgeting workshop in Chicago (Learner & Carlson, 2019).

Through the town halls and online survey, the City was better able to understand the wants and needs, particularly for transparency, of the public (Image 2). The results from both forms of engagement showed a strong interest in better understanding and addressing property taxes, pension reform, settlements and judgements, personnel reduction, affordable housing, and other spending priorities (Mayor Lightfoot and City Budget Team Announce Results of 2020 Budget Survey and Town Hall Meetings, 2019). By knowing that these topics and issues are the most salient to the residents of Chicago, the City will be able to provide further information and potentially allocate further funding to these issues, specifically affordability, property taxes, and hiring and firing within the government.

Case Study: Minnesota Department of Transportation & Minnesota GO

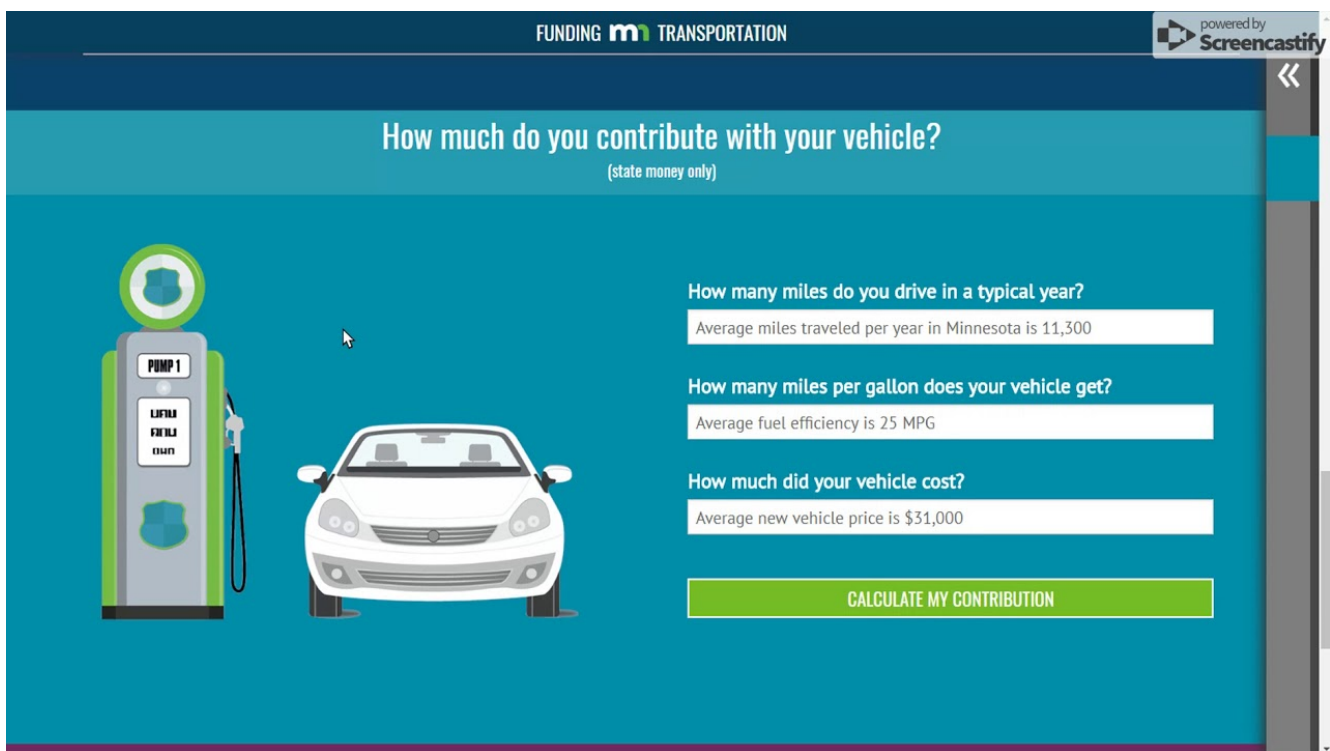
The Minnesota Department of Transportation (MnDOT) is Minnesota's multimodal transportation system overseeing all forms of transportation and providing funding for projects throughout the state (MnDOT Vision, n.d.). The vision of the organization is to maximize "the health of people, the environment and [the] economy" through planning, building, operating, and maintaining safe, accessible, efficient and reliable transportation systems (MnDOT Vision, n.d.). One of the values of MnDOT is diversity and inclusion, which includes receiving feedback from different communities through the public engagement process.

In 2007, MnDOT performed an overhaul on their community engagement practices. This overhaul included revisiting a public engagement handbook, *Hear Every Voice Handbook* (1999), a guide for engagement throughout the agency. The new handbook was "crafted to reflect the evolution of public engagement since the previous handbook edition, provide guidance and understanding of the MnDOT approach to engagement, and serve as a platform for ongoing improvement of engagement activity" (Jones, Sweeney, & Hoereth, 2016). MnDOT changed their public engagement in several different ways. First, MnDOT wanted to provide public engagement training for those within the organization to increase usage of the new engagement strategies. MnDOT housed online training and webinars on their website for two years, accessible to everyone.

Second, MnDOT redesigned their website to make it more user-friendly and increase a user's likelihood of finding participation opportunities, current projects, and previous projects. Here, the training and webinars were housed to allow practitioners within MnDOT and those outside to have the opportunity to learn from the agency's years of outreach experience. The hope of the agency was for practitioners to have a guide and extensive toolkit for community engagement instead of needing to "reinvent the wheel" each time there was a new project requiring outreach. Next, MnDOT began incorporating more social media engagement into their overall outreach strategies, including the use of online surveys. MnDOT also used social media ads to funnel traffic and recruit respondents for online

surveys, and the agency has pulled data to track the demographics of who is being engaged online, changing tactics if underrepresented communities are not being reached.

All of these strategies led to the creation of Minnesota GO, an online portal where MnDOT houses transportation plans and engages with communities online. The Minnesota GO portal is interactive with ways to submit comments, see what other residents are saying, request a visit from MnDOT to one's organization, and see current engagement opportunities and public meetings (MinnesotaGO: A Collaborative Vision for Transportation, n.d.). The portal also provides information regarding transportation funding, a performance dashboard, a trend library, and toolkits that can be downloaded (Image 3). Through Minnesota GO, there is an email campaign to engage community members and stakeholders, specifically targeting stakeholders in disadvantaged populations, before and after public engagement, allowing people to stay engaged through a variety of avenues (Jones, Sweeney, & Hoereth, 2016).



The screenshot shows a web interface titled "FUNDING m TRANSPORTATION" with a "powered by Screencastify" logo. The main heading is "How much do you contribute with your vehicle?" with a subtext "(state money only)". On the left, there is an illustration of a gas pump labeled "PUMP 1" and a white car. On the right, there are three input fields with pre-filled values:

- How many miles do you drive in a typical year? (Average miles traveled per year in Minnesota is 11,300)
- How many miles per gallon does your vehicle get? (Average fuel efficiency is 25 MPG)
- How much did your vehicle cost? (Average new vehicle price is \$31,000)

At the bottom right, there is a green button labeled "CALCULATE MY CONTRIBUTION".

Image 3 – This shows an example of interactivity on Minnesota GO website (MinnesotaGO: A Collaborative Vision for Transportation, n.d.).

MnDOT's overhaul of their engagement techniques shows an effort to incorporate new strategies to reach broader audiences, including those who are engaging on digital and social media platforms. MnDOT continued to engage with community face-to-face, but these changes allowed new voices to be heard and for deeper engagement to occur within underrepresented communities. This case study is an example of a broader change in engagement strategies instead of a single project, and public and private sector organizations can take advantage of the lessons learned from MnDOT.

Broader applications of these three case studies will be discussed later, as well as how these lessons can be applied to the Atlanta case study.

Discussion

Below, Table 1 shows ways that technology can be paired with traditional community engagement to increase public participation. Table 1 was created to review the ways technology can be incorporated into traditional community engagement, yet this table is nowhere near comprehensive. As technologies advance and change, there will be continuous ways for technology to be used to increase public participation. Many of these ideas came from the literature and in the search for appropriate and diverse case studies. This table can be used to help any organization evaluate how they can easily add technology into their engagement to reach larger and more diverse groups of people.

Community Engagement Type	Adding Technology	Case Study Example
Public Meetings	<ul style="list-style-type: none"> -Facebook Live / Live stream / virtual meetings -Digital reminders (via email or social media) -Pairing with online surveys to gather further engagement -Visualizations to illustrate data 	Participatory Budgeting in Chicago
Canvassing	<ul style="list-style-type: none"> -QR code to provide resources -have digital tools (tablets, phones) to sign up for email list 	
Mail / Email campaigns	<ul style="list-style-type: none"> -QR code to take people to a website -Using tools (Constant Contact, Mail Chimp) to increase outreach and curated emails 	Minnesota Go
Educational Workshops / Presentations	<ul style="list-style-type: none"> -Visualizations -Toolkits created and shared online -wiki creations for information sharing -blogs 	Minnesota Go
Charrettes	<ul style="list-style-type: none"> -In-person surveys or online mechanisms of polling (Google, Doodle, etc.) -Allow people to contribute online with questions or comments -Do scenario planning & visioning through online platforms 	
Dot voting / stakeholder vote	<ul style="list-style-type: none"> -Online surveys, voting polls -Using apps to vote during meetings -Providing input with open-source and interactive mapping (location-based engagement) 	NYC Parks Without Borders
Engagement / Outreach / Fun Events	<ul style="list-style-type: none"> -have tablets or phones (digital tool) to sign up for email list -have digital tool to give opinions at events -provide virtual tours 	
Posters / Advertising Materials	<ul style="list-style-type: none"> -Digital newsletter -Social Media presence -QR Codes to direct to online sources -blogs with special topics 	
Receiving feedback from community regarding needs (311 or hotline)	-Civic technology, open data resources	

Table 1: Ways of incorporating technology into traditional community engagement, including examples from case studies

Broader Application

The lessons from New York City's Parks Without Borders show that pairing traditional community engagement with digital engagement allows for more voices to be heard. With technological methods of engaging with the public, people who have different schedules, a need for childcare, and accessibility challenges can be engaged, broadening the pool of feedback for public initiatives. Having an online component of public meetings can help reach these people, as well as reaching those who may not feel comfortable speaking in public. People will respond differently to alternative forms of engagement. As digital engagement is used, the type of participation is moved from lower rungs of the Citizen Participation Ladder to higher rungs, moving from informing to partnership and delegated power.

The lessons learned from the City of Chicago case study show the success of online surveys for receiving feedback on specific, public issues. Participatory budgeting is a form of community engagement that is relatively unique in the United States, and, generally, it would be used in the public sector. This form of community engagement as paired with technology allows a broader audience, including those who generally cannot participate because of scheduling difficulties or need for childcare, to participate in important governmental decisions. Using online surveys with a variety of traditional community engagement strategies allows more voices to be heard and yields a greater diversity of perspectives. Surveys are ideal for getting stakeholder votes on different topics, for use to help set agenda items for educational workshops, and for use at the end of public meetings to gather further feedback from those who may not wish to speak up. Surveys are ideal for reaching community residents who may be home-bound, ill, elderly, or working alternative schedules, and these surveys have the ability to reach residents who may not feel comfortable coming to public meetings, like immigrants. One version of the online survey that is slightly alternative to the one used in NYC and Chicago is the use of open-source mapping to receive stakeholder votes from the community based on where certain initiatives should take place. This type of tool is called web-based public participation

geographic information systems or PPGIS (Mandarano, Meenar, & Steins, 2010). Online surveys and stakeholder votes are a catch-all public engagement tool, and they are adaptable to most contexts.

One lesson from the Minnesota GO case study is the success of an online presence, online correspondence and newsletters. Having a website where community members and practitioners can easily search for initiatives, projects, opportunities to become engaged or volunteer is incredibly important. Having an online presence whether on an organization's website or on social media is an excellent way of reaching people who are active in the digital age and having both is even better! The use of online tools to send targeted email campaigns is effective at reaching community members who are not able to engage in person for various reasons. These emails can range from calendar invites, to reminders for upcoming events or ways to engage, and, further, to newsletters providing curated content relating to an organization's cause and many events. More people are able to engage digitally, especially working individuals and those who rely on email for many aspects of life. This type of correspondence can also transfer to social media. There can also be Twitter, Facebook, and Instagram accounts which post about upcoming meetings and engagement opportunities. The Minnesota GO case study shows how the effective use of targeted ads which are directed at underrepresented communities can increase turnout for public meetings and engagement campaigns.

If organizations are having a difficult time getting an audience for their meetings, they can adjust the ways that people can access these meetings, including allowing for the live stream of meetings (through Facebook Live or Periscope) to broaden the audience to those who cannot access the meetings. Another solution for attracting a larger audience to public meetings and community engagement events is sending a monthly newsletter with upcoming events paired with email reminders for public participation opportunities. This would be especially effective for recurring meetings where someone's schedule could allow them to attend infrequently, so they would appreciate a reminder.

Another major lesson of the Minnesota GO case study is their housing of training and educational services on their website can increase awareness of public issues and increase public

engagement. Providing training and webinars on an organization's website also allows for people to engage and learn all in one place. This will also provide more publicity for the organization, itself, because as people use these resources, they will become more familiar with the work of the organization and its outreach. Minnesota GO recognizes that community members are interested in learning from organizations they respect, and many community members will take the opportunity to join in educational workshops or presentations, especially if they are well-advertised, interesting, and engaging. Educational workshops can also yield educational toolkits which can be shared with the community broadly online.

Even with these diverse case studies, Table 1 covers more opportunities for partnering technology with traditional community engagement. These ideas will be discussed here for the application to the Atlanta Case Study. When an organization is canvassing, whether knocking on neighborhood doors or tabling at a local event, marketing materials, flyers, or sign-up sheets should have QR codes to direct community members to organization websites, event registration, or links to sign up to newsletters and organizational outreach. QR codes can also be added to flyers posted on community bulletin boards on traditional mailers. QR codes are easy to use, free, and they are convenient for community members to access a website immediately without having to type in a web address.

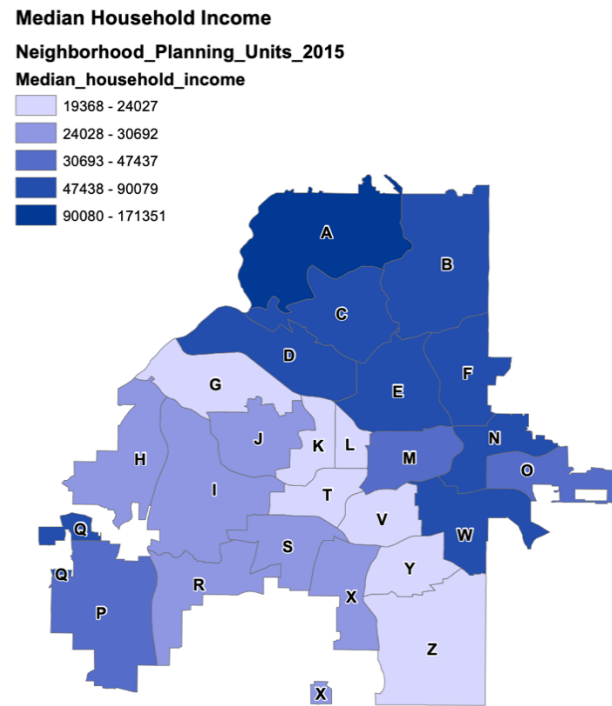
Charrettes are an important aspect of traditional public participation, and with a few technological tools, these events can become more effective. Charrettes can incorporate in-person online surveys or games that allow polling or quizzes (Google, Doodle, Kahoot, etc.), and this can be a way to have immediate interaction in large groups of people. Before, during, or after charrette meetings, there should be an opportunity for community members to submit questions or comments for discussion during the event (or afterwards at another forum). This is also another opportunity for live stream or live tweeting of an event. At public events, it is important for organizations to have immediate ways for community members to sign up for mailing or emailing lists, to learn more, or to

check out more information about an issue and how it may affect them. One way of achieving this is by sharing visualizations that are interesting and informative, and these can be in digital form. It is also recommended that there be some form of tablet or phone (owned by the organization) where people can immediately sign up for campaign and targeting newsletters.

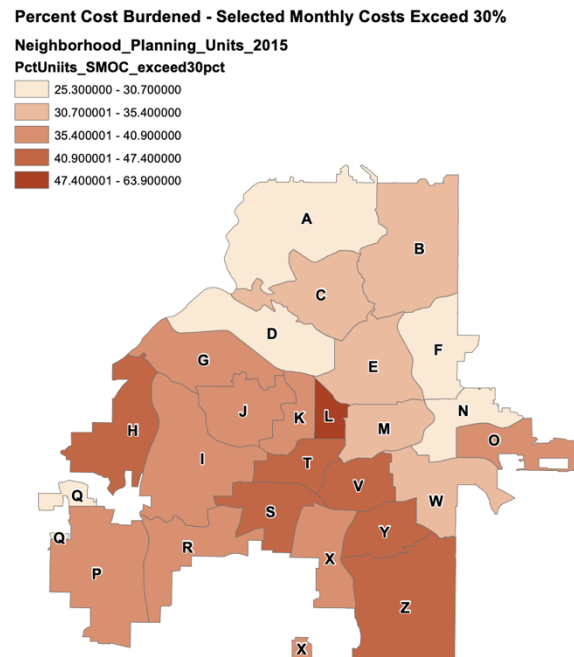
The last opportunity for pairing technology with public participation that will be discussed here is civic technology, which is defined as technologies that are designed to “enhance the relationship between people and government” (Donohue, 2017). These technologies are developed to give people more opportunities to participate in local governance and add their voices to the conversation. Civic technology and other forms of open data resources are taking off across North America as an opportunity to work with traditional 311 and hotline information. Toronto, Ontario has focused on incorporating civic technology to increase public outreach and engagement.

The Atlanta Case Study

The Background section describes the origin of the neighborhood-level planning movement. The NPU system was established in Atlanta in 1974, yet there have been relatively few changes to the system since then. It was established with 24 NPUs encompassing the City of Atlanta, and, in 2006, NPU Q was created when the neighborhoods in the far southwest corner were annexed by Atlanta. NPU Q is, by far, the smallest NPU by population and by geographic size. Now, there are 25 NPUs throughout the city, varying by size, number of neighborhoods, socioeconomic conditions, and level of economic development. There are large discrepancies in median income, population size, educational attainment, and cost burden among the 25 NPUs (see Map 1 & 2 and maps in Appendix).



Map 1 shows the Median Household Income across the 25 NPUs in Atlanta.



Map 2 shows the Percent Cost Burdened across the 25 NPUs in Atlanta.

The purpose of the NPU system is to act at the base of all community engagement in Atlanta.

Prior to ruling by Atlanta's City Council, development plans, licensing, or zoning changes are brought before an entire NPU for public comment. The purpose of the system is to enable "citizens to express ideas and comment on city plans and proposals while assisting the city in developing plans that best meet the needs of their communities" ("Atlanta City Council, GA," n.d.). NPU meetings are held once a month, Monday through Thursday in the evening, and there is an attempt to distribute the NPU meetings throughout the month. For example, some NPUs will meet on the first Tuesday of every month, while other NPUs will meet on the third Wednesday of every month. These meetings generally range from two to three hours depending upon the agenda items and how strict the timekeeper is. Each NPU has the opportunity to write their own by-laws which are then adopted by the NPU, and as long as the by-laws do not contradict the City's charter, the NPUs have this right to be autonomous. This means that each NPU has variations in how they are run, how many officers they have, how meetings are conducted, and even how community residents become members (paying dues, number of meetings attended).

The City of Atlanta has never conducted a comprehensive review of the NPU system, though other cities, such as Minneapolis and St. Paul, have both had regular comprehensive reviews of their neighborhood planning systems. The first independent comprehensive review in Atlanta was announced in late 2018 by the Center for Civic Innovation, a local think-tank which studies civic engagement in the City, with the intent to "improve community engagement [and] to address issues of inequality in our city through solutions built from the ground up" (Pendered, 2018; NPU Initiative, n.d.). The organization "believes that finding and supporting community solutions to community problems starts with making sure that everyone can be heard" (NPU Initiative, n.d.). Because there has not been a comprehensive review of the system, there is little known about its true effectiveness, though there are perceptions among those who choose to engage in the system and those who choose not to. These perceptions of effectiveness affect engagement among the population and trust in the

institution. It is important that the comprehensive review of the system happens now as society moves toward a more digital world, requiring a change in how engagement is conducted. Here, we will provide recommendations for how best to incorporate digital engagement into the work of the NPU system.

In the summer of 2019, the author helped to develop the quantitative and qualitative methods for the comprehensive review by creating surveys, maps, visualizations, and tools for implementation during the review. The comprehensive review is looking at the differences in how each of the 25 different NPUs are conducted, the people who engage with the NPUs regularly, the perceptions of the NPU system, and the types of democratic structures within NPU meetings. The review will eventually provide recommendations for improving community engagement, improving outreach, and increasing effectiveness of the system. Incorporating technology into traditional community engagement will, ideally, help to increase outreach, make community engagement more effective, and help the system increase efficiency.

Current Incorporations of Technology

Currently, there are some forms of technology woven into the fabric of the NPU system. First, residents can opt-in for reminder emails regarding NPU meetings. However, this is not an automated sign-up system. To be put on a list to receive emails, one must email a specific address with one's name and NPU selected. While this is an option that provides for more residents to know about upcoming meetings, this is a system that has the potential to become muddled. If someone is not monitoring this email, it would be easy for someone's request to be overlooked for a long period of time. The ideal way to sign up for reminder emails would be for the system to be automated through an online query.

The second way that technology is already incorporated into the NPU system is through a website which provides online agendas, maps, and information for residents. For someone who doesn't know what NPU their neighborhood is in, one can look at a map or look at a list of neighborhoods

within each NPU. One can also look up agendas ahead of time for their NPU meetings. Certain NPUs also have social media presences through their own websites, Facebook, and Twitter. This presence is not system-wide, and it depends upon the leadership and how they wish to disseminate information and connect with their residents. Based on the author's personal search (in August 2019) for each of the NPUs social media presence, eleven of the 25 NPUs have unique websites, fifteen of the NPUs have Facebook pages or groups, and seven of the NPUs have Twitter presences (Table 2). Outreach via website and social media is an ideal way of reaching community residents while publicizing events and opportunities for engagement.

Auxiliary Platform	Website	Facebook	Twitter
Number of NPUs with platform	11	15	7

Table 2 - Auxiliary Platforms for the NPUs either with a website, a Facebook presence, or a Twitter presence.

The third way technology is incorporated into the NPU system is a new program, the NPU University, where people can sign up to take in-person courses regarding the NPU system, general onboarding, by-laws, parliamentary rules, zoning fundamentals, permitting, the legislative process, code enforcement, and more. The course information for NPU University is available online as is registration for each of the courses. However, the courses are offered in-person throughout the year on weekdays during work hours because of the availability of those volunteering to teach courses. As of now, there is no online component or online repository of the course content. A repository for training and course content (similar to Minnesota GO) would be a great opportunity to provide free courses for a variety of people in the community without having to be available during traditional work hours and without having to be selected on a first-come, first-served basis. The way these classes are offered can pose a barrier to people who are working full-time jobs unless their jobs are providing them time to take the courses.

Recommendations for Further Incorporating Technology

Based on Table 1 earlier in the Discussion section, there are several, general ways for technology to be easily incorporated into traditional community engagement. By adding digital engagement to traditional engagement practices, we have the opportunity to move further up Arnstein's Ladder. For public meetings, NPUs could incorporate virtual meetings and live stream the presentations and discussions which are had during the meetings. This would allow people who are not able to make in-person meetings because of timing, accessibility, transportation, or other responsibilities to be able to take part and pose questions themselves. NPUs could also pair public meetings with online surveys where people are able to share their comments and opinions without having to speak up during the in-person meeting. Having experienced NPU meetings, it can be difficult to express opinions because of the rapid pace of meetings and short timeframes to make comments or ask questions.

For canvassing and email campaigns, it would be easy for NPUs to use QR codes on their marketing content to allow people immediate access to online resources, including their website, social media platforms, and ways to sign-up for digital correspondence. In-person canvassing or tabling can also benefit from having tablets, computers, or phones which allow residents to sign up for digital correspondence, too. For educational workshops or presentations, like NPU University, the NPU system should incorporate the sharing of toolkits or training on their City of Atlanta website or on their personal websites. As mentioned briefly above, this would increase the number of people who could participate in the courses since they would be accessible at any time.

When NPUs have charrettes, they can incorporate online mechanisms of polling to take a read of the room immediately. Also, NPUs could allow people to submit questions or comments online to stay involved in the process, even from afar. NPUs can also perform stakeholder votes through online surveys and polls to increase the number of stakeholders with a voice. This was done in New York City and Chicago with effective results. This form of engagement would also distribute the power to

more people, allowing for participation that is a degree of citizen power (partnership or delegated power).

When focusing on the perceived needs of the NPU system, we can identify the “low-hanging fruit” when it comes to technology incorporation into community engagement. Here are a few recommendations that could be most quickly and efficiently incorporated within Atlanta’s NPU system. First, individual NPUs can create accounts on social media platforms and if they are able to (because of capacity and funding), create a website. In the future, City of Atlanta could provide funding for the creation and upkeep of individual NPU websites. This would allow NPUs to direct traffic to online resources, including a calendar of events, training materials, ways to become involved, and online communities like blogs or forums. This would also be an easy platform to provide live streams or recordings of community meetings. Second, the City of Atlanta and individual NPUs can create digital newsletters to be disseminated to community members who wish to sign-up. These newsletters can include upcoming events, ways to volunteer, upcoming elections, upcoming agendas, etc. Newsletters can create important connection points for community members who can only intermittently attend meetings.

Many people in Atlanta are connected through social media and the internet, though studies from 2014 show that almost 28% of households in the City of Atlanta do not have access to a computer and internet (Pendered, 2016). Hopefully this percentage of residents has decreased since 2014 through many of the initiatives of public schools to link school children with laptops and high-speed internet (Lee, 2019). Adding digital engagement to traditional engagement is not a perfect solution because of the digital divide in Atlanta. By increasing digital engagement, we can reach more people, but there will still be a certain percentage of people who are missed in the City of Atlanta, specifically those who are lower income and traditionally underrepresented.

Conclusions and Implications

One of the most important aspects to keep in mind when incorporating technology into public participation is that context determines the appropriate technology to be used. Certain communities will prefer the use of one technology over another or a different form of outreach. It is important to consult with various community members before landing on long term forms of digital engagement. Use an online survey to see what community members prefer. Try a few forms of digital engagement in conjunction with traditional engagement to see what appeals to the widest range of people. Something to keep in mind: go where people already are. If a large community of people is already present on a certain social media platform, go to them and engage there. There is no need to recreate the wheel when seeking the participation of community members.

One last note: though the use of technology can bring more people to the figurative table, the digital divide can prevent traditionally underrepresented communities from having a voice. Moving forward, community engagement strategies should consider how to reach those people who are missed in traditional community engagement and digital engagement.

Future Research

Future research should look at quantifying the effect of using technology in traditional community engagement. This could be done most effectively (as far as replicability and applicability) through a temporal differences-in-differences methodology looking over several communities in a certain time span. By comparing several communities or neighborhoods over a span of time before and after the use of technological engagement, an appropriate counterfactual could be established. If all neighborhoods had minimal digital engagement (such as a relatively inactive social media account), then measuring the difference of engagement, broadly, and unique engagement would show the effectiveness of the technological engagement. Regardless, by comparing each neighborhood to itself after a time period of digital engagement, the results would be methodologically sound.

An appropriate location for this study would be in the Atlanta NPU System, though there would need to be random selection of the NPUs that would participate. Studying all 25 would be effective and thorough, but it would provide a lot of data, and there could be difficulty in setting standards of measurement across the board.

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