WHY SMART COMMUNITIES NEED DIGITAL INCLUSION

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The term "smart city" covers a lot of ground.

One oft-repeated definition, from Techopedia, says that *"A smart city is a designation given to a city that incorporates information and communication technologies... to enhance the quality and performance of urban services such as energy, transportation and utilities in order to reduce resource consumption, wastage and overall costs."* And there are a lot of other definitions for "smart city"[1]. That's a lot to take in, without even mentioning the Internet of Things, sensors, driverless vehicles, AI, Big Data, the cloud, and gigabit networks everywhere.

It falls to local officials and planners to figure out how much of this is hype and how much is genuine; what version of "smart" is relevant to their communities' real needs and possibilities; and how to chart a pragmatic, community-focused path toward that local version of a smarter city.

In charting that path, local government leaders are cementing divides if they fail to include strategies for digital inclusion and digital equity in their smart community plans.

There is still an urban digital divide. Smart communities could make it worse.

In recent years, discussion of the "digital divide" by policymakers and the media has focused almost exclusively on rural broadband deployment gaps. But three-fourths of the twenty million American households who still lack

1 Businessdictionary.com defines a smart city as *"A developed urban area that creates sustainable economic development and high quality of life by excelling in multiple key areas; economy, mobility, environment, people, living, and government. Excelling in these key areas can be done so through strong human capital, social capital, and/or ICT infrastructure."* According to the United Kingdom's Centre for Cities: *"The UK Department for Business, Innovation and Skills... considers smart cities a process rather than a static outcome, in which increased citizen engagement, hard infrastructure, social capital and digital technologies make cities more liveable, resilient and better able to respond to challenges."*

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home broadband or mobile data connections live in urbanized areas, not in remote rural regions; and they are very likely low-income.

In 2017, according to the Census' American Community Survey, 76 U.S. cities included 100,000 or more households. One-sixth of all those urban households lacked any kind of home Internet subscription, including a cell data plan.

The unconnected ranged from more than 30% of all households in Miami, Detroit, Cleveland and Greensboro to fewer than 10% in Seattle, San Diego and Charlotte. Even in those better-connected cities, homes without Internet connections numbered in the tens of thousands.

And for poorer households – those with annual incomes below $35,000 – the unconnected percentages were much higher across the board. Even in digital strongholds like Seattle, San Jose, Portland, Austin and San Diego, between a fifth and a quarter of lower-income households lacked any kind of home broadband subscription including a cell data plan. The *median* percentage of lower-income households without home Internet, for all U.S. cities above 100,000 households, was 30%.

Unconnected citizens already face major disadvantages compared to their online neighbors. They can't easily access online job listings. They can't, apply for most jobs without an email address. Their children can't do homework at home. Their options for "normal" banking, shopping, healthcare access, civic and social participation are all shrinking rapidly.

Given all these pressures to get online, why are so many urban residents – who almost always have broadband Internet and mobile services available where they live -- still unconnected? The simplest, if not the only answer, is cost. Standalone home broadband service in most cities costs between $50 and $80 a month. To a lower-income working family struggling with housing and childcare costs, or a retiree grappling with medical expenses, an "Internet bill" amounting to 5% or more of disposable income is often unaffordable. It's certainly beyond the means of most truly impoverished residents.

The implications of these numbers for smart-city planners should be clear: If your plans depend in any way on your citizens' ability to access the Internet – to communicate, learn, provide feedback or access services – then those plans:

1. Will automatically exclude a significant number of your citizens, especially those in lower-income households and neighborhoods, and

2. May well increase the economic and civic marginalization of those citizens…unless you take steps to avoid these outcomes, with strategies that are both *smart* and *inclusive*.

How could smart community initiatives have the perverse effect of marginalizing or simply bypassing less-connected citizens? Here are a couple of examples:

1. A common smart city strategy involves public "crowdsourcing" of information to help set public service priorities, via web complaint forms, smartphone imaging, etc. Often the residents and communities who are least connected, and thus least prepared to use these tools, are

those whose voices are already the faintest in civic conversations. When pothole repairs and park improvements are prioritized on the basis of digital complaints and suggestions, will their voices become even fainter?

2.   Mobility-oriented smart city planners often seek to enhance the convenience of public transit with real-time information provided via mobile apps. But contrary to popular mythology, mobile device ownership is far from universal, especially for low income citizens who depend on public transit.[1] If public services like transit default to digital communication with their users, what happens to their old analogue communications, like widely distributed paper bus schedules?

In both these examples, there are obvious ways to minimize adverse effects for less-connected citizens. Local government officials can keep soliciting phone calls and written complaints as well as digital communications; public transit systems can keep distributing those paper schedules. But these "solutions" require the city to accept a reduced efficiency benefit of its smart city initiatives.

There is another approach for communities that want to ensure that all of their citizens can benefit from smart city tools and strategies. It's simple: *Make digital inclusion for all your citizens part of your smart city plan, and digital equity one of its key goals.*

The solution to the urban digital divide is digital inclusion. Smart cities could embrace digital inclusion and make it happen.

Digital equity is *"a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy."*

Digital inclusion is, in essence, what communities do to increase digital equity: *"the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies."* [2]

Digital inclusion is about access and use of technology, but it consists of "activities" that are very human and personal: helping people learn basic computer skills in small groups or one-to-one; helping them find the most affordable internet services and devices available; providing technical and social support as they gain confidence and find uses for their newfound skills.

Digital inclusion initiatives are happening in hundreds of communities across the country -- in libraries, neighborhood centers, public housing estates, workforce and literacy programs, senior centers and schools. In most cases these efforts include free basic training in computer and Inter-

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2 https://www.digitalinclusion.org/definitions/. Here's NDIA's full definition of digital inclusion: "Digital Inclusion refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs). This includes 5 elements: 1) affordable, robust broadband internet service; 2) internet-enabled devices that meet the needs of the user; 3) access to digital literacy training; 4) quality technical support; and 5) applications and online content designed to enable and encourage self-sufficiency, participation and collaboration. Digital Inclusion must evolve as technology advances. Digital Inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional and structural barriers to access and use technology."

net use. They often work with nonprofit computer refurbishers to get their participants affordable laptops and desktop systems, or buy tablets for them at wholesale prices. They also help participants find and enroll in low-cost home broadband services like Mobile Citizen[3], Mobile Beacon[4], AT&T's Access[5] or Comcast's Internet Essentials[6]. Some library systems lend mobile wifi devices to patrons to who lack home Internet while some housing authorities install their own networks to provide free access for their tenants.

Community digital inclusion programs come in all sizes, and many levels of sophistication and funding. But the effective programs tend to have a few things in common: They're operated by, or in partnership with, trusted community organizations or institutions in the communities they serve. Their style of service delivery is practical, hands-on and personal. And with a few notable exceptions, they're *seriously* underfunded.

The last point is important, because it means most urban digital inclusion efforts are only able to scratch the surface of their communities' needs.

A handful of local governments across the country have stepped up to make digital inclusion a civic priority, and to help create support mechanisms, plans and strategic alliances to promote it in their communities. NDIA spotlights the best of these local government efforts in our "Digital Inclusion Trailblazers" program.[7]

While they are important -- and there are more of them every year -- these city-led efforts to promote digital equity and inclusion are far less numerous and ambitious than the hundreds of smart city initiatives now vying for attention and funding across the country.

For the reasons we laid out above, this should not be the case. Communities that aspire to smarter futures based on data, networks and algorithms cannot ignore the 10%, 20% or 30% of their households who remain digitally unconnected, often digitally illiterate, unable to take advantage of new tools and opportunities, and excluded from new channels for civic participation and accountability.

A community that fails to reckon with its digital divide can hardly be called "smart", no matter how much AI is embedded in its systems and how much data is stored in its cloud.

Digital inclusion should be part of every region's smart community strategy. Fortunately, there are a few communities that have been smart enough to recognize that.

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3 https://mobilecitizen.org/

4 https://www.mobilebeacon.org/

5 https://www.att.com/shop/internet/access/#!/

6 https://www.internetessentials.com/

7 https://www.digitalinclusion.org/digital-inclusion-trailblazers/

Chattanooga, TN - In Chattanooga, a non-profit entity convenes work around both digital equity and Smart City innovation. [The Enterprise Center](#) is a technology-driven economic development partner to the City and County, tasked with establishing Chattanooga as a hub of innovation and improving lives by leveraging advanced networks to create, demonstrate, test and apply solutions for the 21st century. With a core mission that includes digital equity and inclusion initiatives, the Enterprise Center is able to ensure digital equity remains central to Smart City pilots and investment (and vice versa).

Portland, OR -- Portland City Council adopted the [PDX Smart City Priorities Framework](#) on June 21, 2018. The Framework recognizes the need for a city-wide, coordinated approach for city staff to use in deciding how and if to engage in Smart City PDX work, keep this work accountable to the Portland community, build and support community partnerships around data and technology, and define a clear and thoughtful process for cross-bureau collaboration and decision-making. As a result, Portland is one of the first cities to declare what it means to focus on marginalized communities in its smart cities work. The City's [Office for Community Technology](#), which leads the City's Digital Equity Action Plan and a has a long history of working with diverse populations to identify their communications technology needs, played a major role in helping craft the Framework and is committed to using it to guide digital inclusion efforts.

San Jose, CA -- The City of San Jose is allocating 5G pole attachment fees to a Digital Inclusion Fund, the largest in the country. San Jose will award grants to nonprofits and city organizations that are interested in expanding on one of five program streams - internet access, device distribution, awareness campaigns, digital literacy skills and innovation pilots.

Austin, TX -- Smart Work Learn Play, initiated by the Housing Authority of the City of Austin (HACA), with support from Next Century Cities, the Transit Empowerment Fund and the City of Austin's Digital Inclusion and Transportation departments, aims to ensure that the design, deployment and use of smart cities technologies are inclusive and equitable. The program hires HACA-resident Smart City Ambassadors to work with local government and corporate partners to: 1) teach HACA residents how to use digitally-enabled education, workforce and transportation tools; 2) advocate for and manage meaningful partnerships with private smart city technology providers; 3) engage in democratic processes, online and face-to-face with local and other government officials to advance equity in policy and governance; 4) participate in engineering design, deployment and evaluation of smart city systems and tools with a wide array of actors.

Digital inclusion initiatives have also been linked to smart city strategies and programs in **Louisville, KY** and **Long Beach, CA** among other communities.

Free digital inclusion how-to manuals at

digitalinclusion.org/guidebooks

DIGITAL INCLUSION IN YOUR SMART COMMUNITY: SOME PRACTICAL STEPS

How can a city official or planner who wants to emulate these cities, and incorporate digital inclusion in a local smart city plan, get started? Here are a few practical steps:

1. Find the people in your community who are already engaged in efforts to help disadvantaged, underconnected residents gain digital access and skills. Your public library is an obvious place to start, but there are other strong possibilities: neighborhood centers and organizations, your public housing authority, other nonprofit housing groups, workforce training agencies, faith-based social services, Goodwill Industries, the local Community Action Agency, the public schools, and so on. A good leading question is: "Who's offering free computer training in this city?"

    You also want to look for any nonprofit computer refurbishers, and for individuals or groups engaged in "community wi-fi" projects.

    Even if you can't find digital inclusion programs already in operation in any of these places, you will probably find leaders who have strong, practical ties to low-income residents and who understand the barriers to digital equity for those residents.

    Engage these people and invite them to participate in your smart city planning process.

2. When you identify key topics for your smart city discussions, investigations and planning -- including any consulting contracts -- make sure that agenda includes your community's unconnected and under-connected residents and their place in the future you're talking about. And make sure that the framework for discussion and evaluation of every potential smart community initiative includes two questions:
    a. How would this initiative be affected by the inability of many of your citizens to participate using digital tools?
    b. Is there a potential for this proposal to harm or exclude citizens who lack digital access and/or skills?

3. When you reach out to your business community, and major institutions like healthcare providers, to talk about the implications of a smart city for them, don't forget to mention the digital inclusion agenda. Private employers in all communities are eager to see more job applicants with basic digital skills. Many banks are conscious of the problems for their online banking strategies (including possible Community Reinvestment Act issues) posed by communities full of customers who lack digital connections and skills. Hospitals want more patients, including those who are poor and elderly, to use their online patient portals and scheduling, prescription and telehealth applications. Utilities want customers to use smart meters. You could find corporate leadership to be very supportive of local government-led initiatives that promise to address these issues.

4. Talk with your peers in other communities who've made digital inclusion part of their smart city thinking. We've listed a few of these communities above, and there will be more includ-

ed among NDIA's Digital Inclusion Trailblazers as time goes on. NDIA will be very happy to make introductions for you.

As you take these practical steps, it is also important to urge city officials to take a leadership stance with respect to smart city projects and digital inclusion. Such leadership makes a difference -- as does outreach to communities with fewer tech resources to explain smart city initiatives and their impacts. Digital inclusion practitioners are natural partners with city officials in planning and executing this outreach.

And don't forget: Digital inclusion isn't the only equity issue for aspiring smart communities. The same neighborhoods and groups that lack digital access and skills have numerous other critical problems and perspectives that need to be raised and addressed -- in housing, public safety, community health, environmental justice, economic opportunity, and the list goes on. A technology-enabled, data-driven region might serve to empower communities and citizens to overcome these problems… or it might marginalize them further and make their problems even harder to overcome. Smart community leaders who seek the former, not the latter, need to make sure that communities at risk have seats at the table, resources to participate effectively, and a prominent place on the agenda for their long-term interests.

But one of those interests must be to to make sure the smart community is digitally inclusive.

That's partly because digital equity is an important end in itself, for all the reasons outlined earlier: Employment, education, health care, financial empowerment, civic and social engagement.

But it's also because in an ever-more-technologized civic environment -- the very definition of a smart city -- citizens without digital access and skills are sure to be ever-more-marginalized.

If smart city champions and practitioners are not actively reducing digital divides then they are unintentionally exacerbating them.