

Ogbo-Gebhardt, Ezezi

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Strategies for Effective Knowledge Sharing and Encouraging Use of Digital Asset Mapping Platforms: Insights from Community-Based Organizations

Erezi R. Ogbo-Gebhardt
North Carolina Central University

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Abstract: *Perhaps due to the growing array of digital inclusion programs that are increasingly offered by community organizations, states are examining ways to help their residents search – and determine their eligibility – for programs within their communities. To this end, several states are conducting digital asset mapping and plan to build a publicly accessible repository of these assets. However, there is a risk that the platform will be built yet acceptance and use will be low. This paper discusses the case of North Carolina and presents emergent themes from local community-based organizations on current knowledge sharing practices in digital inclusion ecosystems within communities and insights on key factors to encourage adoption and use of the digital asset inventory platform.*

INTRODUCTION

With the unprecedented post-pandemic interest in – and funding allocated towards – digital equity and inclusion, community-based organizations are increasingly offering digital inclusion services and programs to improve digital equity in the communities they serve. Previous research has established that lack of access, the affordability barrier, and limited digital skills are the major barriers to broadband adoption within the United States (Consumer Reports, 2021; Dailey et al., 2010; J. B. Horrigan & Duggan, 2015; Perrin, 2021). Many of these digital equity

and inclusion programs address the affordability barrier to broadband adoption and lack of digital skills. Through digital equity and inclusion programs, organizations offer subsidized broadband access, service, and device, as well as free or low-cost digital literacy training or digital navigation support. However, the target beneficiaries of these programs, as well as the organizations that help connect them to these resources, increasingly find it difficult to keep abreast of the existing programs. For example, half of eligible households for the Affordable Connectivity Program (ACP) – a federal broadband subsidy program – were unaware about the program one year after it was established (J. Horrigan, 2023).

With many newly established digital inclusion programs that have different eligibility requirements, offer different benefits, and sometimes have different participating providers, the target recipients often find it difficult to determine which programs exist and which existing programs they are eligible to participate in. To address this barrier, there has been calls for a central platform to facilitate knowledge sharing and help people check their eligibility for existing programs.

A critical consideration in building the repository is ensuring that members of the community can access and use the collected information. However, there is a risk that the asset mapping platform will be built, but take-up and use will be low. Extensive research in the

Erezi Ogbo-Gebhardt
eogbo@ncsu.edu

Information and Communications Technology for Development (ICT4D) field has shown that the “build it and they would come” approach does not work (Cutcher-Gershenfeld et al., 2016), rather the platform needs to be designed in partnership with the local community (Dijkers et al., 2018; Mphahlele & Maepa, 2003; United Nations Development Programme (UNDP), 2001). Further, a poorly defined implementation could affect uptake of the platform (Tseng, 2020).

Using funds from the National Telecommunications and Information Administration (NTIA) through the Digital Equity Act, U.S. states and territories developed digital equity plans to outline proposed solutions to “promote meaningful adoption and use of high-speed Internet” within their constituencies (NTIA, n.d.). A review of the plans reveal that a large number of states and territories aim to include asset mapping and create a publicly accessible repository of digital equity resources, see the draft digital equity plans of North Carolina², Indiana³, and Mississippi⁴.

To mitigate the risk that the platform will be built and scarcely used, policymakers are increasingly grounding their solutions in Community Informatics and Community Engagement approaches. This involves applying a “community perspective” by identifying and hearing from key stakeholders in order to achieve alignment to deliver results. This approach complements the asset-based community development strategy which was introduced by Kretzmann & McKnight in the early 1990s. Asset mapping is a community development strategy that is centered on the community identifying and mapping its existing resources, then using the identified resources to address social issues (Kretzmann & McKnight, 1993).

Using North Carolina as a case study, this paper presents insights from applying Community

Informatics in practice to design and build a statewide publicly accessible digital inclusion asset mapping platform. The North Carolina Department of Information Technology (NCDIT) partnered with researchers at North Carolina Central University and the Friday Institute at North Carolina State University to collect data on assets across the state and inform the design of the platform. Specifically, this paper investigates:

- I. The current knowledge sharing practices of digital inclusion stakeholders.
- II. Their perspectives on effective approaches to encouraging adoption and use of a publicly accessible digital asset mapping platform.

The remaining part of the paper proceeds as follows: next, I present a discussion of the research methodology. The third section presents the findings of the study, focusing on the themes that emerged from the focus groups on the current knowledge sharing practices in digital inclusion ecosystems and design considerations to encourage the adoption and use of the platform. The paper concludes with a summary of the main contribution and proposed future work.

METHODS

We conducted six semi-structured focus groups with 16 digital equity practitioners, advocates, and funders representing 15 digital equity organizations across North Carolina, see Table 1 for the complete list of participating organizations. The participants were recruited from a subset of organizations that had completed the 2023 statewide digital asset inventory survey as of September 5th, 2023.

The focus groups were held between October and December 2023, lasted approximately 90 minutes each, and took place over Zoom. The interview topics included a description of the status quo – their existing strategies for knowledge sharing to raise awareness and facilitate collaboration between organizations; their expectations for how they would use the platform; and a reflection on their

² [State of North Carolina Digital Equity Plan](#)

³ [Indiana Digital Equity Plan](#)

⁴ [State of Mississippi Digital Skills and Accessibility](#)

experiences while using different platforms that were created for other states. Some sample

Institutional Review Board at North Carolina Central University, approval number 1201723.

Table 1: Participating Digital Equity Organizations and Organization Type

Organization Type	Organization
Public Library	Catawba County Library System
Senior Center	Caldwell Senior Center Inc
Senior Center/ Nonprofit	McDowell Senior Center
Senior Center/ Nonprofit	Randolph Senior Adults Assoc.
Senior Center/ Nonprofit	Cyber-Seniors Inc.
Nonprofit	Western NC Workers Center
Nonprofit	Katabasis
Nonprofit	Orange Literacy
Nonprofit	HUBZone Technology Initiative
Nonprofit	The Caraway Foundation
Nonprofit housing agency	Four Square Inc.
Foundation	Reidsville Area Foundation
Government	Person County Government
Reentry	OurJourney
Education	Forsyth Technical Community College

questions that we asked include “If you were to go to a website that published data on existing digital equity programs, what information would be most useful to you?” and “Can you describe any particular data/reports that you would be interested in generating from the platform?” Participants were also asked about how to encourage adoption and use of the platform.

All interviews were audio-recorded on Zoom and transcribed using Zoom and Otter.ai. The data was repeatedly reviewed and iteratively coded by the author to identify themes that emerged around the current process of knowledge sharing in digital inclusion ecosystems and strategies to guide the design and implementation of a publicly accessible statewide asset inventory for North Carolina.

This study was approved by the

FINDINGS

As described earlier in the paper, this study investigated the current knowledge sharing practices implemented by digital equity organizations in North Carolina as well as critical considerations to encourage adoption and use of the digital asset mapping platform. This section discusses the themes that emerged in the interviews for each topic.

Current Knowledge Sharing Practices

We asked the interviewees about their organizations’ current practices for raising awareness about the digital inclusion programs they offer and communicating with other digital equity organizations to facilitate collaboration.

For Raising Awareness.

Only one organization noted that they do not have a budget for advertising, suggesting that effective outreach is being prioritized by local digital equity organizations. This reflects a shift in the findings of ineffective outreach efforts that impacted enrollment in the Emergency Broadband Benefit and initial enrollment in the ACP (Curi, 2021; Hathout, 2021; J. Horrigan, 2023).

One of the organizations shared that they change the topics in their digital literacy training weekly, with the topics decided two weeks in advance. The importance of sharing information about digital equity programs on time and in the right language and culture has been established (CETF, 2019). Data from several studies suggest that program outreach through trusted channels improves enrollment (Levine, 2020; Ogbo, 2022; Wagg & Simeonova, 2022). This view was echoed by one of the interviewees:

“...some of our larger institutions, like our libraries, have not always been as welcoming to individuals in our community,

so we go to where people in the community already meet and trust the institutions such as churches or community centers”

While the majority of organizations in our focus groups utilize one or more outreach strategies, many of them reported that they do not have a good system in place. One of the interviewees commented that they still find pockets in their community that have not heard about their program.

The most popular strategy that the digital equity organizations stated that they rely on to raise awareness in their communities is through word of mouth, closely followed by outreach through partner organizations in the community such as the local library, county school systems, prisons, churches, or other non-profit organizations. As one of the senior centers described, “we have [a] digital librarian [at the public library]...and we partner back and forth, we advertise his classes, and he advertises ours.” Some organizations align their outreach efforts with existing community events such as resource fairs and tabling events. Others tie their outreach strategies with required activities their target recipients need to complete – such as getting a library card for new library patrons or release procedures for previously incarcerated individuals.

Another popular outreach strategy that emerged from the focus groups is the use of media, with traditional print media – such as local papers and flyers – more commonly used than digital media – such as google ads, newsletters, daily and weekly email blasts, and social media. One organization shared that they organize home-based visits to members of their community to raise awareness about digital inclusion programs. Another mentioned that they work with community leaders that help with local outreach.

To Facilitate Collaboration Between Organizations.

While the majority of organizations highlighted the need for collaboration and

communication among digital inclusion partners in communities across the state, some noted that this is an ongoing challenge that they face – either due to limited organizations in their locale to collaborate with, or the absence of an effective means to facilitate collaboration. Among the organizations that currently collaborate with other institutions, they learn about the work those institutions are doing through word of mouth, roundtable meetings with local nonprofits, community events such as resource fairs and a community table where people that share flyers about programs they offer.

Other knowledge sources that emerged include the websites of government agencies – such as the North Carolina Division of Broadband and Digital Equity – and advocacy organizations – such as the North Carolina Chamber of Commerce. Organizations also reported using digital media such as emails from other organizations and weekly press releases – however, one of the organizations noted that their press releases are not archived, therefore, people cannot search for information at a later date. Multiple organizations noted that there is no central resource in their community to facilitate effective collaboration between organizations working towards digital equity and inclusion.

Designing an Effective Knowledge Sharing Platform

The participants were unanimous in the view that there is a significant need for a digital, easily searchable, and publicly accessible asset mapping platform. As one of the organizations explained:

“When we were putting our digital inclusion plan together, we [mapped] out where services [and programs] were [and] that is listed in our digital inclusion plan...but who wants to search through a 52-page document?”

Define the Expected Users

In multiple focus groups, the discussions about how to design an effective platform began with the question “who are the expected users?” Some organizations noted that while they expected to be the initial primary uses of the platform, they also anticipated that the initial primary users would include unpaid caregivers of digitally vulnerable groups such as the children and grandchildren of older adults. A view that emerged from the focus groups is that most of the individuals that need the resources would not have much use for the asset inventory at its initial launch – largely due to the lack of digital skills. However, many of the organizations were confident that with support, some of them would learn to use the platform independently.

Considerations to Encourage Adoption and Use

Four broad themes emerged from the focus groups on how to encourage adoption and sustained use of the asset mapping platform.

There were some suggestions that training on how to use the platform should be provided. Beyond general “how-to” resources that could be published on the website, there were discussions on how to support adoption and use among the digitally vulnerable groups. Some participants noted that the members of the community that need the digital inclusion resources lack the digital skills to use the platform independently. Therefore, to encourage adoption and use among these groups, they recommended that NCDIT partners with digital equity organizations that offer digital literacy training to create a session on how to use the platform as part of their existing training program.

One concern expressed regarding acceptance of the tool within the communities was whether the digitally vulnerable populations would trust a platform that is developed by the government. Within the US, digitally vulnerable populations are often historically marginalized with significant of government agencies. A number of interviewees felt that to address this concern, states should consider collaborating with

trusted local community-based organizations to raise awareness and encourage adoption.

A recurrent theme in the focus groups was a sense among the participants that it is critical to build usability into the platform. Several interviewees commented that the members of communities that need the digital assets are often unconnected or underconnected and reliant on mobile devices, have low literacy, and speak English as a second language. They argued that, therefore, the platform needs to be smartphone and tablet compatible and tailored for people with low literacy. As explained by one of the participants:

“All of our folks have low literacy skills to begin with. So, looking around on a site. It has to be pretty obvious for them. To find it. We also work with a lot of people who have very limited English language skills. And again, it has to be presented in a way they can find that information quickly”

Some organizations noted the importance of ensuring that the data on the platform is accurate and up to date. A number of participants emphasized the need for information that would help individuals determine if they are eligible for – and how to access – the digital asset. A related view came up in discussions of the accuracy of the information on the platform. One interviewee commented: “There's nothing more frustrating than to get information for organizations and then you make the call, and they don't exist anymore.” The issues related to maintaining the data on the platform were expected to be more in smaller organizations and could be difficult to track. One interviewee argued that the smaller organizations are more likely to change their digital equity programs and, due to fewer personnel, be less likely to update their information on the platform..

CONCLUSION

To help bridge the digital divide in the state, North Carolina is building a statewide,

publicly accessible repository of digital assets – organizations that offer digital inclusion programs. This paper discussed findings from focus groups with a sample of local organizations to inform the design and build of the platform. The core findings in this study are: 1) a confirmation that there is a need for a central, easily accessible digital platform to facilitate knowledge sharing within and across digital inclusion ecosystems; and 2) to encourage adoption and use of the platform, North Carolina should consider offering training, partnering with local organizations for outreach, prioritizing usability of the platform with digitally vulnerable groups in mind, and implementing strategies to ensure that the information on the platform is useful and accurate.

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References

CETF. (2019). *Catalyst for Action. 10 Years of Achievement in Closing the Digital Divide 2007–2017*. California Emerging Technology Fund.
https://www.cetfund.org/wp-content/uploads/2019/08/006_CETF_2017decadeAR_LP10_forweb.pdf

Consumer Reports. (2021). *Broadband Survey. A Nationally Representative Multi-Mode Survey*.
<https://advocacy.consumerreports.org/wp-con>

tent/uploads/2021/08/CR_Broadband-Survey_8_2021_VF.pdf

Curi, M. (2021, September 23). Broadband Subsidy Program Sign-Ups Lag Amid Lack of Outreach Funds. *Bloomberg Law*.
<https://news.bloomberglaw.com/tech-and-telecom-law/broadband-subsidy-program-sign-ups-lag-amid-lack-of-outreach-funds>

Cutcher-Gershenfeld, J., Baker, K. S., Berente, N., Carter, D. R., DeChurch, L. A., Flint, C. C., Gershenfeld, G., Haberman, M., King, J. L., Kirkpatrick, C., Knight, E., Lawrence, B., Lewis, S., Lenhardt, W. C., Lopez, P., Mayernik, M. S., McElroy, C., Mittleman, B., Nichol, V., ... Zaslavsky, I. (2016). Build It, But Will They Come? A Geoscience Cyberinfrastructure Baseline Analysis. *Data Science Journal*, 15, 8–8.
<https://doi.org/10.5334/dsj-2016-008>

Dailey, D., Bryne, A., Powell, A., Karaganis, J., & Chung, J. (2010). *Broadband Adoption in Low-Income Communities*.
<https://www.ssrc.org/publications/broadband-adoption-in-low-income-communities/>

Dijkers, J., Overbeek, S., & España, S. (2018). Improving ICT4D projects with Agile software development. *Proceedings of the 5th International Symposium “Perspectives on ICT4D” (P-ICT4D 2018) Co-Located with 10th ACM Web Science Conference (WebSci’18)*, 2120.

Hathout, A. (2021, September 13). Outreach ‘Most Valuable Thing’ for Emergency Broadband Benefit Program: Rosenworcel. *Broadband Breakfast*.
<https://broadbandbreakfast.com/outreach-most-valuable-thing-for-emergency-broadband-benefit-program/>

Horrigan, J. (2023, March 17). Half of ACP-Eligible Households Still Unaware of the Program. *Benton Foundation*.
<https://www.benton.org/blog/half-acp-eligible-households-still-unaware-program>

Horrigan, J. B., & Duggan, M. (2015). Home broadband 2015. *Pew Research Center*, 21.

- Kretzmann, J. P., & McKnight, J. L. (1993). *Building communities from the inside out: A path toward finding and mobilizing a community's assets*. Chicago: The Asset-Based Community Development Institute.
<http://archive.org/details/buildingcommunit000kret>
- Levine, L. (2020). Broadband adoption in urban and suburban California: Information-based outreach programs ineffective at closing the digital divide. *Journal of Information, Communication and Ethics in Society*, 18(3), 431–459.
<https://doi.org/10.1108/JICES-04-2020-0041>
- Mphahlele, M. E. K., & Maepa, M. E. (2003). Critical success factors in telecentre sustainability: A case study of six telecentres in the Limpopo Province. *Communicatio*, 29(1–2), 218–232.
<https://doi.org/10.1080/02500160308538028>
- NTIA. (n.d.). *State Digital Equity Planning Grant Program*. Retrieved June 7, 2024, from <https://www.ntia.gov/program/state-digital-equity-planning-grant-program>
- Ogbo, E. (2022). *Broadband Voucher Programs: Evaluating the Alabama Broadband Connectivity Program* (SSRN Scholarly Paper 4178771).
<https://doi.org/10.2139/ssrn.4178771>
- Perrin, A. (2021). *Mobile Technology and Home Broadband 2021*. Pew Research Center: Internet, Science & Tech.
<https://www.pewresearch.org/internet/2021/06/03/mobile-technology-and-home-broadband-2021/>
- Tseng, L. (2020). *Implementation of a Digital Asset Management System using Human-Centered Design* [Rochester Institute of Technology].
<https://repository.rit.edu/theses/10571/>
- United Nations Development Programme (UNDP). (2001). *Essentials: Information communication technology for development*.
http://web.undp.org/evaluation/documents/essentials_5.pdf
- Wagg, S., & Simeonova, B. (2022). *A policy-level perspective to tackle rural digital inclusion*. 35(7), 1884–1911.