

Documents

Client Background for WiderNet

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WiderNet History

WiderNet is a nonprofit organization, based in Chapel Hill, North Carolina. The organization was originally established in 2000 by Professor Cliff Missen and Dr. Michael McNulty. As a Fulbright scholar, Prof. Missen studied in Nigeria at the University of Jos. There, he experienced first-hand the impact of lacking internet access on education and communication within those communities. Upon returning from Nigeria, Missen and McNulty founded WiderNet at the University of Iowa. After twelve years, WiderNet relocated to the University of North Carolina at Chapel Hill due to a lack of funding and capacity. The University of North Carolina at Chapel Hill School of Information and Library Science provided support, funding, and extensive resources to the growing WiderNet (Citizen Press 2). Over the course of fourteen years, WiderNet has serviced more than five million people across the globe.

WiderNet seeks to better understand how history, stakeholders, and institutions combined have all influenced broadband access. The presence of underprivileged groups, specifically rural and low-income communities in North Carolina, are heavily impacted by a lack of internet access. Thus, they can benefit from the work that WiderNet provides.

The WiderNet Project works to deliver educational resources, knowledge, and training to underprivileged individuals and communities worldwide and improve their digital communication. WiderNet provides computers, networking, and educational resources, to complement these resources. They also offer low-cost, high-impact coaching and training. WiderNet emphasizes the importance of high-impact coaching and training as they believe human capacity enables people to become more independent and self-sufficient by using Information and Communication Technology.

The WiderNet Project aids many people who lack internet connectivity and information resources, but its work primarily focuses on developing nations:

- Currently, five billion people lack adequate access to the Internet.
- In many developing countries, universities may have a direct connection to the Internet but not enough bandwidth to adequately serve their users.
- Only a fraction of professors and students have access to email and basic computer programs.

The result is the exclusion of these developing regions from global communication and the exclusion of people seeking better education.

The WiderNet Project addresses these problems. The organization believes that Information and Communication Technology empowers people, increasing their overall quality of life as they become more knowledgeable and are able to communicate more efficiently.

Additionally, WiderNet aims to close the digital divide between underserved and privileged communities. It is their mission to make resources readily available for all communities so, “those who have been left behind in the past can eventually join the rest of the world on an economically sustainable level,” (WiderNet 2014).

WiderNet received its start from the MacArthur Foundation, the U.S. State Department and USAID, which provided the service organization over 900,000 dollars in grant funding (Citizen Press 1). The University of Iowa Department of Computer Science and the University Libraries funded and hosted the organization during its inception. Alongside these entities, WiderNet currently receives funding from corporations and organizations, including HP, RedHat, Microsoft, Learn Key, 3com, Kirkwood Community College, Iowa Center for AIDS Recovery and Education, REL Software, and The Stanley Foundation.

Additionally, WiderNet prides itself on the partnerships they obtain, all of which share the common goal of providing educational resources as a means of strengthening digital literacy around the world. Their partnership organizations include the United States Agency for International Development (USAID), the United States International Council on Disabilities, Intel, the World Computer Exchange, Ponseti International Association for the Advancement of Clubfoot Treatment, Computers for Africa, and MIT.

In addition to partnering with these organizations, WiderNet is also a member of Digital Durham, a consortium of local organizations committed to the vision of a Durham where everyone is equally engaged in the digital world. Membership includes the Durham County Public Library, the Durham Housing Authority, Durham Public Schools, the Kramden Institute, North Carolina Central University, and WiderNet.

While WiderNet has a large audience they aim to reach, they are a relatively small team in terms of staff. Their current staff consists of an administrative team, coordinators, digital librarians and technical writers, programmers, technicians, and engineers; there are seven staff in total. Additionally, they recruit volunteers to assist their team in various fields.

Problem Overview

WiderNet’s primary mission is to further digital education and communication in North Carolina and the world. Through a combination of training courses, educational materials and resources, and hands-on coaching, WiderNet seeks to improve internet access in areas where internet access is minimal or nonexistent. Through specific programs and

initiatives like the eGranary Digital Library and WiderNet's Offline Education platform, WiderNet provides life skills, tutorials, and digital resources to communities in need. The latter program allows communities with minimal internet access to utilize an offline web-like interface to view resources from Wikipedia, TED, and other educational content creators. As a member of the Digital Durham collective, WiderNet is also dedicated to increasing internet connectivity in Durham County, North Carolina and rural and poor counties across the state.

WiderNet asked us to join in their mission to increase internet connectivity in these rural and poor areas of North Carolina. Currently, WiderNet does not have a comprehensive assessment of internet access in North Carolina and the corresponding impact due to a lack of access to important information. The current documentation outlining North Carolina's history of broadband progress and how it compares with other states is found in the North Carolina Department of Information Technology records. WiderNet has requested more in-depth information. In addition to this information, WiderNet has requested an assessment of the steps needed to promote awareness among stakeholders about the issue of rural broadband access in North Carolina. WiderNet wishes to see a comprehensive plan to provide better information and education on this issue. Lastly, WiderNet needs help determining the impact WiderNet's Offline Education Platform might have in supporting current and new education programs about internet access. The goal would be to better understand a rather unexplored policy problem, rural and poor internet access in North Carolina, and to determine the next steps for bringing awareness to this issue and the role WiderNet's platform plays in this process.

By addressing the aforementioned problem of lack of information about North Carolina's broadband access, we are directly partnering with WiderNet to further their goal of increasing internet connectivity in the world. This information will contribute to raising awareness of this policy issue and encourage legislators at the local, state, and national levels to address internet connectivity in poor communities.

Key Terms

The following terms are key to understanding broadband access in the United States: Broadband, Rural, Access, Internet, E-Connectivity, Mbps, Digital Inclusion, Digital Equity, and ICTs.

- Broadband is defined as high-speed Internet access that is always functioning and faster than traditional dial-up access. Broadband encompasses numerous high-speed transmission technologies such as Digital Subscriber Line (DSL), Cable Modem, Fiber, Wireless, Satellite, and Broadband over Powerlines (BPL) ([FCC, 2019](#)).
- The FCC considers rural areas as defined by the Census Bureau. The Census Bureau defines rural as any population, housing, or territory NOT in an urban area ([US Census Bureau, 2010](#)). The 2010 Decennial Census found an estimated 60 million people, about 19 percent of the US population, live in rural areas. The

land that makes up rural America covers roughly 97 percent of the nation's land area.

- The FCC looks at four areas when analyzing whether or not an area has sufficient access to broadband. Their four areas are: “(1) those with access to fixed services; (2) those with access to mobile LTE services; (3) those with access to both fixed and mobile LTE services; and (4) those with access to at least one of either fixed or mobile LTE services” ([FCC, 2019](#)).
- The internet is defined as an electronic communications network that connects across computer networks worldwide.
- E-connectivity, electronic connectivity, is the ability to connect people, households, and institutions around the world through high-speed internet ([APLU, 2018](#)).
- Fully known as Megabytes per second, Mbps is used as a measurement for internet speed. In 2015, the Federal Communications Commission (FCC) updated the definition of broadband in so that the minimum download speeds needed are raised from 4Mbps to 25Mbps, and the minimum upload speed is raised from 1Mbps to 3Mbps ([FCC, 2017](#)).
- Digital inclusion refers to the social inclusion of disadvantaged groups so that they have the skills, ability, and access to Information and Communication Technologies (ICT) ([Digital Inclusion Map, 2019](#)).
- Digital equity is defined as “equal access and opportunity to digital tools, resources, and services to increase digital knowledge, awareness, and skills” ([ERIC, 2007](#)).
- Formally known as Information and Communication Technologies, ICT encompasses technologies that give access to information through telecommunications. It includes mediums such as the Internet, wireless networks, cell phones, etc. ([Tech Terms, 2010](#)).

History of Current Issue

Our client, WiderNet, works to provide individuals and communities in underserved areas with education resources and digital communication necessary in the modern world. Their current focus is to inform policy in information access education in hard-to-reach communities. Currently, WiderNet focuses on improving access within North Carolina as they build partnerships with organizations such as Digital Durham.

Within the state, the North Carolina Department of Information Technology (NC DIT) works to increase connectivity and access for all North Carolinians. The department releases an annual report on the state of broadband connectivity as well as its planned initiatives for improvements ([NC DIT, 2017](#)). The report states that 10 percent of North Carolina homes and businesses cannot access broadband-speed internet. This is better than the national average and causes North Carolina to rank the highest amongst the southeast. While this is encouraging to hear, NC ranks 40th among other states in broadband adoption rates. Even among households with access to broadband, only 16% are subscribing. The counties with low deployment rates are found to be in rural areas

with low population density. Only one percent of the households without access are in urban areas.

The subpopulation with the lowest adoption rate is found within low-income households. In 2013, only 47% of NC households with annual incomes under \$15,000 adopted broadband. Most of this low adoption rate comes from a barrier. There are five main barriers to broadband adoption- all of which are pronounced amongst low-income households. The main barriers are: “the cost or affordability of service; the real or perceived costs of a computer, laptop or other devices; digital literacy; and the internet’s perceived relevance in a person’s daily life” ([NC DIT, 2017](#)).

In an increasingly digital world, lacking access to broadband is illogical. Within the broad topics of availability and adoption, the plan addresses specific issue areas and industries identified as facing significant and imminent challenges and opportunities. The issue areas addressed in the plan including “K-12 education, economic development, telehealth, and public safety” ([NC DIT, 2017](#)).

Measures

One tool used to measure broadband access is megabytes per second, or Mbps. This tool shows us exactly which parts of North Carolina have fast or slow internet speeds. This is important for our clients because they will want to see which areas of the state suffer the worst. Something else important to our clients will be poverty rates across the state. It will be vital to make the connections between which areas have high poverty rates in addition to low internet speeds. Lastly, we will need to look at population figures to measure which areas of the state constitute as rural and which areas constitute as urban. This will be key in making important connections about broadband access in North Carolina and rural deprivation of that access.

Conditions

There is a general lack of broadband in the most rural and poor communities in North Carolina. Reliable high-speed internet access is necessary for modern society ([USDA, 2019](#)). There are, however, existing conditions that affect our client and the project we plan to do. With regards to organization, the influence and power we may or may not have with outside communities might affect how well we can pull off whatever solution we come up with. If we cannot organize ourselves and practice strict discipline with meeting deadlines, our final product may meet its potential. The social conditions we wish to work in could be difficult if we cannot connect with the community we wish to serve. Willingness to help can be hindered by an unwillingness to be helped. The technological conditions of the project may be complicated. The internet is a sophisticated system, not to mention the concept of internet access and broadband. WiderNet must have the tools it needs to provide communities and individuals with access to broadband.

North Carolina’s top internet providers are AT&T Internet, Spectrum, CenturyLink, SuddenLink, Xinfintiy, and Frontier. In total, there are 168 internet providers in North

Carolina, varying by city or region. The average speed is 38.3 MBPS. Still, there are 468,000 people in North Carolina who do not have access to a wired connection capable of 25mbps download speeds. Even greater, there are 914,000 North Carolina residents that have access to only one wired provider. Thus, they cannot switch. Finally, an estimated 125,000 people in North Carolina do not have access to any wired internet providers where they live ([Broadband Now, 2019](#)). Due to government subsidies, monopolies have formed in rural or low-income areas. This has led to poorer service and speeds amongst these areas.

There are legal conditions to consider as well in North Carolina that might block the overall process of whatever solution we decide on. There is, in fact, an article in the NC Statutes which places several requisites on municipal broadband initiatives in the state. The requisites make it extremely difficult for public entities to offer residents any broadband services. One requisite forces those entities to insert phantom costs into their rates ([Broadband Now, 2014](#)).

Project Steps

Addressing this problem will require several steps: research, creation of research-based resources, assessment of collective next steps to increase awareness, analysis of WiderNet's Offline Education Platform and its impact, and white paper finalization. Our last step correlates to the overall goal of the project. We will use our research and analysis to compile a white paper that informs WiderNet, Digital Durham, organizations concerned about this issue, legislators, companies, and other stakeholders about information access as a policy problem in poor and rural counties with limited broadband.

The first step will be a series of research-based endeavors. We envision this step manifesting itself in a variety of resources that will summarize different aspects of the scope of the issue, general awareness and trends surrounding it, and its history in North Carolina, other states, and the United States at large. Through viewing census data, local and state data, organizational information found in various journals and online databases, and potentially conducting interviews, we will compile the relevant history of the issue and its present scope. This information may eventually manifest itself into a smaller white paper or summary document with a timeline of the history of the issue, graphics on its scope in North Carolina, and comparisons with other states.

Following the completion of the initial research phase, we will move into a period of analysis about the next steps for raising awareness about the problem and building consensus around the issue. Much of the research we have already completed should inform this step, but any further research will mostly be similar in nature to what we've already compiled. First, we will seek to narrow down our research to the most vital next steps. After identifying the necessary next steps, we will assess the feasibility of each and what needs to be done to complete them.

After concluding this general analysis of the next steps, we will take a more in-depth look at WiderNet's Offline Education Platform. Our first goal will be to research and understand the platform, its various implications, and its consequent impact. This research will involve working alongside WiderNet to best comprehend the specifics of the program and any available outcomes of its successful implementation. Next, we will analyze the program's impact on stakeholders and whether it properly addresses the concerns of stakeholders. This will be informed by our previous research on the issue at large and any problem areas deemed significant after the research phase. Lastly, there will be an analysis of how WiderNet's program supports ongoing and upcoming education programs. This will largely involve assessing areas for improvement for the program and whether other organizations are doing similar work.

The final step of our process will be to complete the main deliverable of the project: the white paper. By this time, most of the necessary research will be completed, but if research or analysis is still needed, it may come in the form of scholarly sources and interviews. The majority of this step will deal with compiling and polishing our research into a single source that can be used by WiderNet and its stakeholders to inform on the issue of broadband access in rural and poor communities in North Carolina and its impact on information access.

Deliverables

The necessary deliverables for this project will correspond with the aforementioned steps. First, we will provide a resource compiling the background research and assessment we have done on this issue. This will tackle the stats, trends, and players involved with broadband access in North Carolina and the United States. This can take the form of a lit review containing an annotated bibliography and data-based graphics. This deliverable is vital to informing WiderNet about the issue and the subsequent analysis we will conduct during the project. The research phase may last longer depending on the accessibility of the necessary information, but a tentative due date of late September or early November 2019 is reasonable.

Next, we will compile the analysis portions of the project into an encyclopedic report that will inform WiderNet on the general next steps of furthering information access education and the specific implications for WiderNet's Offline Education Platform. Analysis time may vary depending on the accessibility of data related to WiderNet's program. Generally, this portion of the project should be completed by early November 2019.

The final deliverable will be a white paper. This document will compile the research and information previously used in the researched literature review and analytical paper to create a single polished document for WiderNet and its stakeholders. This step will likely be less research-intensive and revolve around finalizing data points and unresolved questions. The end result should be a coherent and informative document. This document can combine data-based graphics, analytical writing, annotated bibliographies,

and historical assessments to comprehensively address the problem at hand. This will be the last deliverable we create and should be completed by early December 2019.

APPENDIX A.

[FCC Broadband Progress Reports Content 2019](#)

Yearly report completed by the FCC that updates the state of broadband usage and availability in the United States. It also provides definitions, context, and implications of broadband progress.

[FCC Internet Access Services: Status as of December 31, 2017](#)

This report provides helpful data on internet access connections in the US. The information is collected by FCC Form twice a year. It was released on August 28th, 2019.

[NC-Broadband-Plan 2017](#)

The North Carolina Broadband Plan 2017 is the latest report released by NC DIT. It provides context on the history, context, and success of past initiatives taken. The report also gives context to North Carolina's results in relation to other states. The report also outlines future initiatives the state will take to increase broadband access/acceptance across the state.

[Broadband Speed Guide](#)

This page provides a general guide to broadband speeds. It helps us understand the speed of internet in different areas because it shows us exactly how much speed is required to perform everyday tasks. There are examples given for common digital tasks people perform every day.

[US Department of Agriculture](#)

This page explains the concept of E-Connectivity. It provides us with facts to help understand where and why internet access is lacking in rural America. It also gives several reasons why internet connection is essential for a quality lifestyle.

[Municipal Broadband Is Roadblocked Or Outlawed In 26 States](#)

This page provides information on legal barriers to municipal broadband in different states. It also provides direct links to legislative documents. This website was helpful in understanding the legislation in place in North Carolina regarding broadband.

[NC Statutes Chapter 160A Article 16A](#)

This is the actual article from the North Carolina General Assembly that makes it difficult for public entities to provide residents with broadband.

[Iowa City Citizen Press Article 1](#)

An article published by the Iowa City Citizen Press in December of 2004 details the mission of the service organization. This article, written by Rob Daniel, gives historical context to the roots of the WiderNet organization. The article also details WiderNet's initial project partners and funders.

[Iowa City Citizen Press Article 2](#)

An article published by the Iowa City Citizen Press in November of 2012 explaining the relocation of WiderNet from the University of Iowa to the University of North Carolina Chapel Hill. The article, written by Tara Bannow, lays out part of the history of WiderNet as well as the reasons they left the state of Iowa.

APPENDIX B.

Introductory Meeting Agenda

Date: Wednesday, September 4

- 12:20 PM Introductions (Led by Erika Roberson)
 - The team and WiderNet will introduce themselves to each other
- 12:30 PM Project Discussion (Led by Joel Gillison)
 - This is where we ask questions about their organization, how we can help them, and present possible deliverables.
 - Question
 - Who is our audience?
 - What other deliverables would they like to see outside of the one-page white paper?
- 12:50 PM Timeline Finalization
 - Reiterate what we have talked about and put it on paper.
- 1:00 PM Wrap-Up & Next Steps (Led by Erika Roberson)
 - Set up the next meeting and thank them for their time!

APPENDIX C.

Good Afternoon,

I hope your day is going well! My name is Erika Roberson, I'm part of the UNC Public Policy Capstone group working on the project your organization submitted concerning WiderNet. I just want to say on behalf of the team how excited we are to work with you all on this important project. We're already diving into our preliminary research!

As the process begins, we want to first introduce ourselves to you all. I'll start with myself.



My name is Erika Roberson. I'm from a small rural town, Gatesville NC located in the northeastern part of the state. I am a senior double majoring in Public Policy and Political Science with a minor in Social and Economic Justice. In my free time, I intern at Participate, Inc an ed-tech startup in Chapel Hill, volunteer at the Community Empowerment Fund and hang out with friends. My main skill areas are in qualitative research and time management!



My name is Laura Selby. I'm from a small town named Sylva, in the heart of the Appalachian mountains. Currently, I'm a senior double majoring in Public Policy and Communication with an Entrepreneurship Minor. Outside of classes, I work part-time for Lenovo and am part of the service fraternity, APO. My main skill areas are editing, organization, communication, design, & research and reporting. I'm excited to work with you all this semester!



My name is Susannah Horton. I'm from a small community called Mt. Ulla, North Carolina, just forty-five minutes north of Charlotte. I am currently double-majoring in Public Policy and American History at UNC. In my free time, I enjoy working as a head counselor for the Chapel Hill-Carrboro YMCA's after-school program, spending time with friends, and watching Tar Heel basketball! My main skill areas are in data analysis, writing, & editing.



My name is Calissa Andersen. I am originally from Tampa, Florida, but in high school, I moved to Salisbury, North Carolina. I am a senior and currently majoring in Public Policy and Sociology. In my free time, I intern at the Southern Oral History Program, work for the Campus Y, and hang out with my friends. My main skill areas are project management, data analysis, and graphic design!



My name is Joel Gillison. I am from Harrisburg, North Carolina, a small suburb of Charlotte. I am currently a Senior studying Public Policy and Political Science. In my free time, I am a Marketing intern for Corning Incorporated, a small group leader in my campus ministry, and love to play and watch basketball. My main skill areas are project management, public speaking, and writing & editing.

We are all eager to jump in and look forward to meeting with you all. Our follow-up email will discuss times for meeting and further logistics.

Best,

Your UNC Public Policy Capstone Team