

# Outside Looking In: Shaping Access and Use of PCCs

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## ABSTRACT

We examine factors that mediate the access and use of public computing centers (PCCs) that are part of a United States government policy initiative to bridge the digital divide. Drawing on in-depth interviews and field observations conducted in the state of Texas, we interrogate how the social settings in which the sites are embedded, influence the way marginalized users approach and use the Internet resources inside the PCCs. Through our analysis, we demonstrate that access and use of PCCs is mediated by factors beyond the mere availability of computing infrastructure and include conditions such as fulfillment of routine life needs, geo-spatial characteristics of sites, availability of transport, and access to alternative sites of Internet access.

## General Terms

Performance, Design, Human Factors.

## Keywords

Public computing centers, ecologies of use

## 1. INTRODUCTION

Public computing centers (PCCs) are one of the many policy initiatives that the United States is relying on to bridge the digital divide. PCCs are typically meant to remedy the digital divide on two fronts. While they house computers and other hardware essential for Internet use, centers also employ staff to teach users the skills to navigate the online world. Thus the PCCs are tasked with the mandate of not only providing infrastructure for Internet use, but also for creating awareness about social inclusion and the need to get online. Being excluded from Internet access and use is fast signaling an exclusion from American society itself. Even as the country reports an increase in the overall rates of broadband adoption, the growth remains lopsided characterized by a 13% discrepancy between urban and rural areas [e.g. 8, 9]. In their agenda, PCCs are yet another version of public access venues that are popular in the developing world. In the United States, PCCs are anchored within host institutions such as homeless shelters, employment training centers, and rural libraries to support access and use. While the urban centers specifically target under and unserved populations such as ex-offenders, homeless, and the

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unemployed, the rural centers are housed in libraries and typically find utility within the whole community.

## 2. CONTEXT

Literature on telecenters and public access venues address the usage patterns at these sites, the information needs that they serve, the changes that they bring to the life of their users, and the types of user and non-user behaviors [e.g. 1, 4, 5]. However, there is very little that tells us how the settings and conditions in which these sites are embedded shape the access and use of the technology and non-technology resources inside the sites. In an attempt to better inform policy design on creating public access venues, our paper explores the question of what brings users to these venues and what makes them stay. Rather than limit our examinations to user experience inside sites, we extend our inquiry to the outside to locate the ‘externalities’ that shape the way users approach PCCs. Though rural PCC users were not as vulnerable as the urban poor, we include their interviews for analysis because they cater to a diverse group of people who still experience their own form of marginality owing to limited access and lack of Internet resources in rural communities.

## 3. POLICY BACKGROUND

The Broadband Technologies Adoption Program (BTOP) is part of the United States’ policy initiative to bridge the digital divide. Funded by the National Telecommunications and Information Administration (NTIA), BTOP is a federal grant that is expected amongst other initiatives to drive the creation of PCCs that can serve as hubs of access and training for underserved communities. Between the years 2009-2013, the United States spent close to \$200 million in the creation and operation of PCCs alone [3]. This paper is based on sites that are part of a Houston-based non-profit, Technology for All (TFA), which is credited with operating one of the largest PCC ventures under BTOP. TFA formed a network along with Austin Free Net and Metropolitan Austin Interactive Network to fund PCCs in over 90 locations in Austin, Houston, San Antonio, and rural areas in Central Texas. The coalition received around \$9,588,279 in funds, which comprises 3.5% of all BTOP grants for Texas. Of the 90 TFA sites, Houston and Austin host around 30 sites each while San Antonio has 7 sites. The PCCs in these cities form part of various shelters and housing sites. In the rural areas, libraries host the rest of the PCCs.

## 4. METHODS

The analysis reported in this paper follow from 82 user interviews and 34 staff interviews across 19 sites in Austin, Houston, and San Antonio, as well as rural areas in Central Texas. The site selection followed considerations of geographical and type of site representation as well as usage data collected from PCC centers. Our sample includes PCCs ranging from homeless shelters, job training sites, housing units, and rural libraries.

**Table 1. Characteristics of sites hosting PCCs in the study**

Sites	Location	Purpose
ARCH	Austin	Resource center and overnight shelter for the homeless
DeWitty, Austin	Austin	Language and employment-related resources & training
Goodwill Norwood	Austin	Employment, educational, and case management services
Spring Terrace	Austin	Residential complex for disadvantaged adults
Trinity	Austin	Church-affiliated resource center
Ventana del Soul	Austin	Center for vocational mentoring for the ex-offender community
Ferrari Resource & Learning	San Antonio	Community center housing city-sponsored education programs
Haven for Hope	San Antonio	Residential facility for homeless
Smithville Recreation	San Antonio	City-owned multi-purpose facility with computer lab
St. Mary's Learning Center	San Antonio	Education and training facility at Saint Mary's University
Denver Harbor	Houston	Multi-purpose center
Mission Milby	Houston	Church-affiliated community center
Sharpstown Apartments	Houston	Apartment complex
Sharpstown Learning Center	Houston	Literacy center affiliated with the <i>Houston Center for Literacy</i>
East Side University Center	Houston	Educational assistance and job skills development
S.H.A.P.E. Community Center	Houston	Community center primarily serving the African-American community
Rural libraries at Bastrop, Lockhart, and Bulverdere	Rural Texas	Public Library serving Bastrop, Lockhart, Bulverdere and surrounding communities

The data collection was conducted by graduate students at the University of Texas, Austin as part of a Policy Research Project class over two semesters. All students completed the Institutional Review Board training and received approval for the research protocol and questions. We conducted preliminary site visits as a way to familiarize and introduce ourselves to the staff at the PCCs. Based on these visits; we constructed an open-ended questionnaire, which acted as a guide in our semi-structured in-depth interviews with both users as well as PCC staff. Questions for the user interviews probed their ways of using the technology available at the sites, the relationships they shared with the staff, the frequency and duration of site visits, and the conditions

influencing their use of the sites. The staff interviews comprised training and operations details of the PCCs as well as their observations of users' needs and behavior. To minimize any intimidation or pressure to participate in the study, we explained to the users that their participation was independent of their use of the PCCs and would not impact their future access and use in any way. Verbal consent was sought for all interviews and depending on the preference of the participants, interviews were either audio-recorded or handwritten. Field observations were also conducted at all the sites that we visited. All observations and interviews were transcribed and qualitatively analyzed through a process of comparative analysis to identify common themes from the data [7]. Two groups of students analyzed the user interviews and staff interviews separately to aid in collaborative analysis. The analysis was then shared and discussed in class sessions to further refine the findings. For the purpose of this paper, a second iteration of analysis of factors related to access and use of PCCs was again undertaken. Our objective was not to generalize, but to identify patterns of behavior to gain a more in-depth understanding of the PCC ecosystem. Since no identifying information was collected, pseudonyms have been used to report the analysis in this paper.

## 5. DRAWING THE USER IN

While appreciative of and reliant on the free Internet facilities and training classes available at these sites, users seldom mentioned the technology as the primary draw for them to visit the sites even though they actively used the Internet and sought help to execute tasks. The following themes emerged from our analysis that spoke to the ways in which people found themselves availing of the PCC facilities. These themes demonstrate that while technology is helpful for underserved communities, the contexts in which they find themselves marginalized from mainstream society need to be addressed first to help them find value in technology.

### 5.1 Free Showers, Faith, Socializing, et al...

52-year-old Clara is a disabled African American woman. Being wheelchair bound, has limited her ability to seek employment. With the help of a PCC trainer, she has learned to regularly log on to Craigslist to seek housekeeping jobs that permit work requiring limited mobility. But, Clara reveals that the main thing that draws her to the Trinity shelter in Austin is the "devotion". She says, "I come for devotion. I come here for Jesus and also because they have facilities for free showers. I have been coming here even before they had computers and will continue coming even if they take the Internet away." For many of patrons at this site, the center was an important resource in their daily life because it ensured a place to shower and receive free hot meals. For instance, after her basic needs of food and hygiene were fulfilled, another user Susan said she could then begin thinking of the Internet and how it could help her employment prospects. Susan reports that with the help of the Internet and PCC staff, she got herself an email address and also learned about Craigslist that helps her look for employment. She now logs on to Craigslist every time she is at the center. Jaime, yet another user who now regularly logs on to the computer at the center says that she began visiting the place 7 years ago because she could get free bus passes and receive guidance on procuring various certificates that a homeless person would need. Says Jaime, "The center has people I can turn to for help. They have a phone that I can use to make calls and also a mailbox I can use. When they got computers here, I began taking advantage of that too. With the help of the trainers, I learned to make a resume for my job search, but I come here primarily to meet the caseworkers. I log on the Internet if I have time." If PCCs in the urban centers serve specific

disadvantaged populations, the more general population that rural libraries serve bring into play different dynamics that draw people to use of PCCs. Some people like Jennifer visit the library with the instrumental purpose of using the high speed Internet for her business that involves buying and selling stuff on eBay. For many others though, the library is a setting that is deeply intertwined with the local life of the community and provides an opportunity to catch up with neighbors. Loranzo, a resident of Lockhart says, *“In a rural community like ours where can we socialize? At the bar? We have all grown up here and the library is where we can meet and talk to each other. Now that I have children, I come here even more often so that they can meet other kids. When we are here we all get on to the computer. I usually check my email and the kids complete stuff for their homework.”* The above quotes demonstrate that need for technology and awareness about its uses although growing is not constructed as a primary motivation for users to visit the PCC. Users are more willing to spend time using or learning about the Internet and eventually begin getting online with more frequency if the PCC access and use is embedded in the requirements of their daily lives. While the context of the more marginalized urban users differs from the rural users, users in both geographies attest that it is easier to integrate the Internet when its availability and use is woven in their everyday life requirements.

## 5.2 The built environment

In their review of literature on the anthropology of the built environment, Lawrence and Low [2] stress its importance because it serves as a way for communities to articulate and embody the way in which society, culture, and economy intersect in their life. For others like Stokols, [6] physical places act as contexts where the nourishment and enrichment of fundamental human values takes place. In our analysis, we found that users repeatedly made references to the geo-spatial characteristics of the sites as factors that influenced their continued use of the PCCs. Hence we ask, how does the built environment of the PCC contribute to its use?

The marginality that the urban poor experience from mainstream society also extends to the kind of spaces that they can visit. Cities present limited choices that populations such as the homeless and ex-offenders can freely access and inhabit. In these conditions, users sometimes chance upon the Internet and begin using it because it is housed in conditions that are perceived to be safe and welcoming. George, a user at Mission Milby in Houston clarified his relationship to the PCC when we asked him if he would continue visiting the center if he was provided with the same at his home. He said, *“Mmm, yes probably because of the environment. It is a drug free, anti-violent place.”* George was not alone in invoking the ‘peaceful and safe’ environment of the PCCs. Another user, Vincent, at Haven for Hope in San Antonio said that he felt safe using the computers because there was no tolerance for violence or drugs – something that he would have to grapple with on the streets. At the Trinity center in Austin, Sheela a 45-year-old homeless woman who uses the Wi-Fi on her laptop visits the center to find solace by talking to the other visitors there. Says Sheela, *“I come here mainly for the fellowship. I suddenly found myself homeless following family upheavals. Here, nobody yells at me and tells me I am terrible. Everybody is nice and respectful and they help you improve your life. It is also nice that they have Wi-Fi so I can use my laptop.”* Sara, a senior citizen in Bastrop reported that the social practices around the PCC in the library encouraged a senior person like her to start using the Internet. She said, *“It impressed me that we had a lot of teenagers at the computers. And that they would come here.. After school they would pop in here so they were pretty much always occupied with the computer. I was pleased with that and also*

*wanted to get online.”* However, if the PCCs are perceived to be safe welcoming places on the inside, their immediate surroundings sometimes present a different picture and can ironically discourage even those people who are actively seeking various resources including the Internet to better their lives. William, a staff person at one of the PCCs was formerly a homeless person for a year and recalls how the environment around ARCH - a homeless shelter in Austin was a deterrent for his use, *“As far as resources at the ARCH, they are beyond plentiful, but you have people not using them. You have (outside the shelter) all these guys just standing outside, doing their drug deals or just standing around doing nothing. Yet, on the inside there are computer and the Internet and the Austin Free Net room and counselors you can talk to; but people choose not to. I remember when I first walked up to the shelter; I was scared intimidated; I didn’t want to go inside. So I stayed at Barton Creek for a week. I did eventually get the courage to go inside (the ARCH) and I found that if you apply yourself, they will give you respect. There is a goodwill job center, great supplies, things to keep you clean, and a place to sleep. There are resources which people may not know going by what they see on the outside.”* William’s observation was echoed by another homeless user in Austin where the two homeless shelters – ARCH and Trinity are less than a block away from each other. Charles who had been homeless for three years said, *“I used to hang around at the ARCH, but after sometime, I started coming here (Trinity). The wrong kind of people hang at the ARCH. I want to avoid them so I come here if I have to use the Internet. Here, they talk about the Bible so there is less talk about drugs.”* These experiences highlight that even if free Internet access is provided, social conditions surrounding the PCCs play an important role in mediating the access and use of these resources.

## 5.3 Transport

Access to reliable transport also played a pivotal role in facilitating access and use of the PCCs. If users in the urban setting found themselves dependent on public transport to access PCCs, rural users without access to private transport are completely excluded from being able to access the sites. While location of PCCs near shuttle stops facilitates access for the urban user, their dependence on city buses dictates the duration and frequency of their visit to these sites. Hannah, who relies heavily on Craigslist to find leads for odd jobs says, *“I learned how to make my own visiting cards and resume at the PCC and Craigslist really helps in keeping me employed, but I cannot come as often as I want to. I am on the bus a lot so it takes me a while to get here. I have to ride for a long time and then switch buses. I wish they had more of these centers all over Austin.”* The absence of public transport in rural communities meant that most users relied on their own transportation to visit the library. Interestingly, we found that compulsions such as having to drive children to the library sometimes also led to parents being introduced to the Internet. Norah, a mother of two children aged 10 and 14 said, *“We live 15 minutes away from the library and I started coming to the (Lockhart library) because I had to drive my children here. I began logging on to the Internet here and now use Facebook to keep in touch with my relatives.”*

## 5.4 Alternatives to PCCs

Though the infrastructure and trainers were not always the primary drivers of initial use, the presence of the PCCs and their staff are of continued importance to users who find value in the service once they discover the benefits of being online. Clara, who

spoke about how she would continue visiting Trinity even if the computers were taken away added, "...but, please don't take them (computers and Internet) away. It is nice to be able to use them and have trainers. It will be difficult to find an alternative because I do log on to Craigslist to look for jobs." The importance of providing free access to the Internet for vulnerable and underserved populations can also be gauged by the kind of alternatives that are available to users. In the cities for instance, users have access to the Internet in the libraries, but these sites can be out of bounds for certain populations like ex-offenders. Samuel, an ex-offender living in Austin says, "I stay in the transitional house and am barred from going near a library and this PCC is one of the few places that I am permitted to visit because they have a phone here and the authorities can call and check on me here. We have no Internet facilities at the house and I am not permitted to own a device with Internet connectivity, so this is the only place I can come for Internet access to pursue job leads." If Samuel found himself relying solely on the PCC owing to his status as an ex-offender, others like Shane prefer the PCCs to the libraries because of the ready help provided by the trainers. Says Shane, "I prefer the PCC because I can always ask the trainer if I get stuck on something. Plus, I am looking for a job. The trainers know a lot of resources because they meet so many people. Even if it were not for the Internet, I would still want to speak to the trainers. They provide you with great leads on where to look and what to do." Sheela who was one of the rare users in our study with her own laptop points out that even a technology savvy city like Austin has very few options for the urban poor such as herself. Says Sheela, "I could go to McDonalds or Starbucks to use their wi-fi, but I cannot do it for free. I would need to buy something there. I cannot afford that so I here for free wi-fi." For the rural users, a different set of conditions dictate their use of the PCC. Some users have access to dial up Internet at home, but prefer visiting the PCC as a more convenient way to get online. Matthew, a mechanic in Lockhart says, "I grow and sell vegetables in our community and enjoy connecting with other farmers online. I have dial up at home, but it is so slow, so I drive to the library to use the Internet here." Rural users who have access to smartphones reveal that they value the PCCs because the smartphone is extremely limiting in the kind of activities that one can use it for. Christina who was visiting the Bastrop library with her children said, "I generally use my smartphone to check Facebook. Imagine if that was all I had to do my taxes too. We cannot afford broadband at home and I come to the library all the time now to use the Internet here." The experiences of these users suggest that even though alternatives supporting Internet access are available even outside the PCCs, the conditions that govern their use and access at these places greatly limits the poor in the urban areas from using them. The rural users on their part grapple with a different set of constraints such as slow dial-up connections and reliance on smartphones for Internet connectivity, which influences their use of PCCs. All of these reasons point to the continued need for public access venues such as the PCCs.

## 6. CONCLUSIONS

Our analysis probed the various factors that mediate the use of Internet beyond the presence of infrastructure and availability of trained help. For those excluded from the Internet, the process of getting online for the first time is sometimes seldom a priority and it is essential to pay attention to the ways in which users come in contact with the Internet and begin to adopt it in their everyday life. The PCC strategy of being embedded inside host institutions that serve various needs of the underserved is hence a step in the right direction. However, careful attention also needs to be

directed to factors such as availability of public transport to the PCC, the built environment of the site, and conditions that exclude users from accessing alternate sites to the PCC – all of which influence the access and use of the PCC and its resources. A limitation of this study is the lack of sufficient detail on how children use PCCs. During our site visits, we noticed that children were enthusiastic users of the Internet – especially in rural communities and were sometimes also the trigger that led parents online. Our IRB protocol did not extend to interviewing minors and hence the data does not reflect the experiences of these young users, which can form the agenda for a future study. Finally, we argue that as the Internet has become more broadly available and more and more institutions require its use, the populations who do not use the Internet have become harder to reach because they are often older, economically disadvantaged, jobless or homeless. Hence, it is essential to design access in environments that remain sensitive to the everyday life requirements of these users.

## 7. ACKNOWLEDGMENTS

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