

# Digital Inclusion in Texas

## A Study of Public Computing Centers



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- Relevance
- Outline
  - International Comparison
  - Digital Inclusion Efforts in Texas
  - Methodology
  - Quantitative Analysis
  - Institutional Survey
  - User Survey
  - Conclusion

# Public Computer Centers Programs in Comparative International Perspective

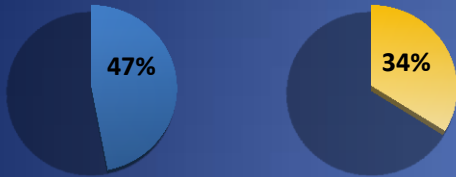
# Public Computer Centers Programs in Comparative International Perspective

- Value of comparative perspective
- Developing and developed countries
- Access and accessibility

# Access to Computers and the Internet by Household

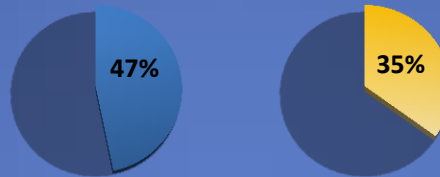
## Argentina

■ Home Computer ■ Internet Access at Home



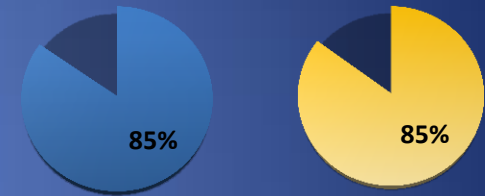
## Chile

■ Home Computer ■ Internet Access at Home



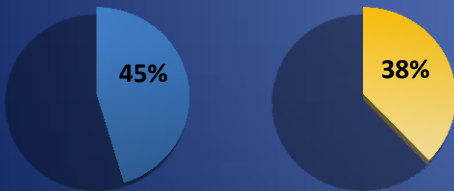
## United Kingdom

■ Home Computer ■ Internet Access at Home



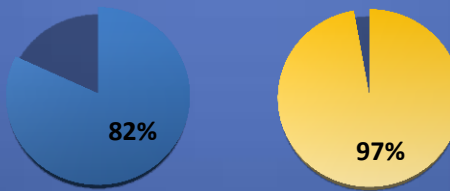
## Brazil

■ Home Computer ■ Internet Access at Home



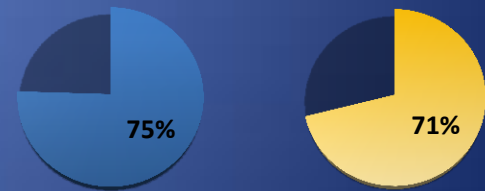
## Korea (Rep.)

■ Home Computer ■ Internet Access at Home



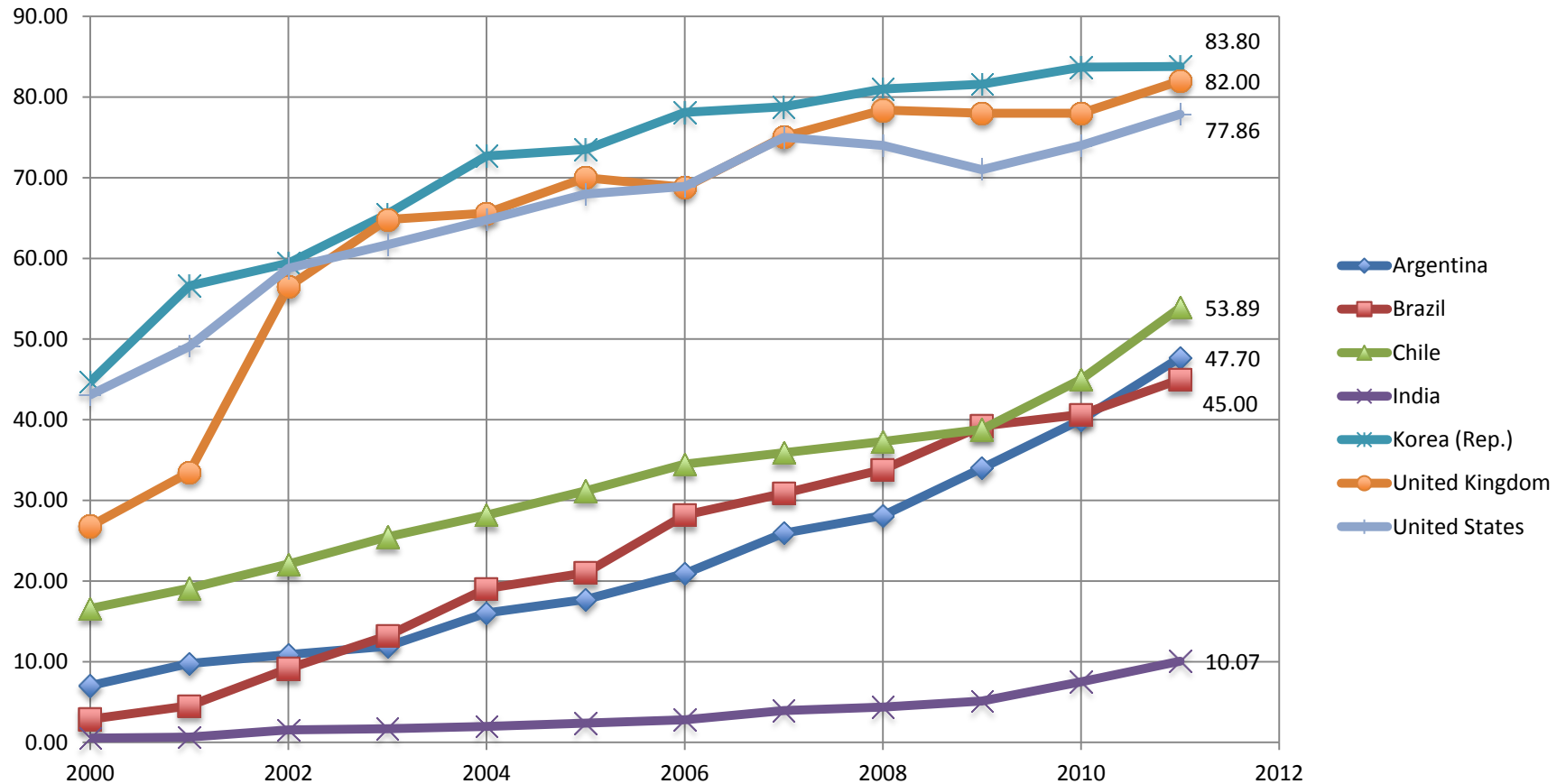
## United States

■ Home Computer ■ Internet Access at Home



All data from 2010-2011, data for India was unavailable  
Source: ITU

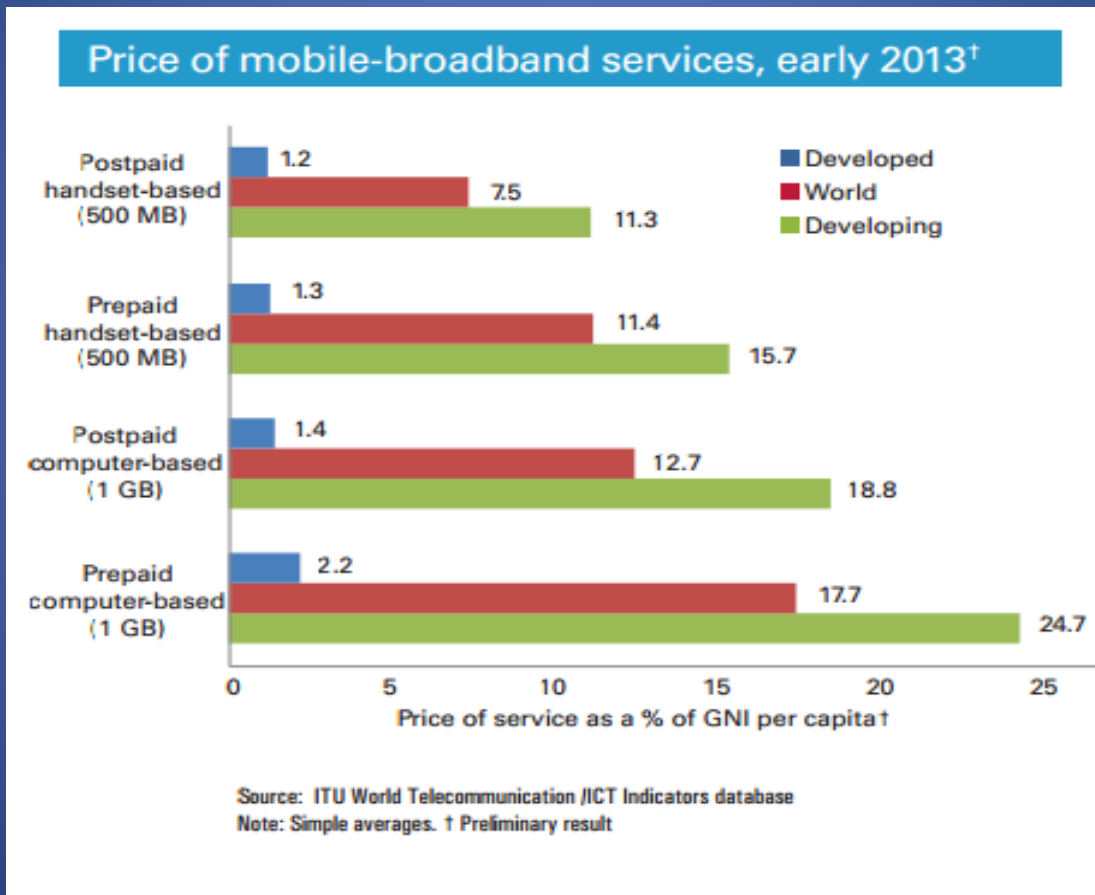
## Percentage of Individuals using the Internet



# International Digital Inclusion Challenges

Argentina	Brazil	India	Chile	Korea (Rep.)	United Kingdom
Quality vs. Cost	Geography; Cost	Rural-urban disparity; Cost	Geography; Cost	Accessibility for excluded groups	Building skills and offering services

# Cost of Broadband Services Relative to Income





# Policies, Plans, and Government Institutions

	Argentina	Brazil	India	Chile	Korea	United Kingdom
<b>Planning and Governance</b>	Argentina <i>Conectada</i>	National Broadband Plan (PNBL)	Telecom Regulatory Authority (TRAI)	Directorate of Libraries, Archives, and Museums	National Information Society Agency	Office of Communications; UK Digital Champion
<b>Focus</b>	Increase broadband connectivity; Infrastructure (fiber optic) and public access centers	Infrastructure; Promotion of Public Access; Minimize Consumer Cost	"accelerating the growth of internet and broadband penetration"	Public Access and Training in Libraries	Infrastructure and User Accessibility	Awareness; Public Access in Libraries and Community Centers
<b>Operations</b>	Empresa Argentina de Soluciones Satelitales SA (fiber optic); community centers	Telebrás	Kiosks	Biblioredes	5 Year ICT Master Plans	Go ON UK; UK Online Centers

# International Public Computing Centers

	Argentina	Brazil	India	Chile	Korea	United Kingdom
<b>Access (type of PCCs)</b>	Computer Centers	Telecenters (public)  LAN Houses (commercial)	Staffed Kiosks	Libraries and regional laboratories	PC Bangs  Terminals and wireless throughout public transport network  Community centers	Online Centers <ul style="list-style-type: none"> <li>• Libraries</li> <li>• Community Centers</li> <li>• Pubs and Cafes</li> </ul>
<b>Accessibility (training, services, etc.)</b>	Community centers  Free training lab and free access  Wi-Fi, AV room  Gaming Consoles	Free Digital Literacy Training (public)  Gaming, job assistance (commercial)	e-Government applications  Free access  Free computer literacy and English courses	Free access  Free training	PC Bangs = low hourly access fees  Public spaces = free access  Customized user accessibility, specialized services	Free access  Free online learning modules  Free or low cost training

# Argentina

## Computer Centers



- *Conectar Igualdad*
- International Telecommunications Union - Telecommunication Development Bureau and *Secretaria de Comunicaciones*
- Computer Centers

# Brazil

## Local Area Network (LAN) Houses and Telecenters

- Public
  - Telecenters
  - Ministry of Communications and Gesac
  - Facilities and Users
- Private
  - LAN Houses



# India

## Hole-in-the-Wall Kiosk



- Rural vs. Urban
- Users, usage, and purpose



# Chile

## Computer Center

- *Biblioredes* began as Gates Foundation initiative
- 420 Libraries
- 18 Regional Laboratories



# Korea (Rep.)

## PC Bang



- PC Bangs (private)
  - Over 22,000
- Public centers (libraries, community centers)

# United Kingdom Online Center

- 3,800 community centers and libraries
- Online government services





# Addressing Underserved and Rural Populations

Argentina	<ul style="list-style-type: none"><li>• Infrastructure expansion</li></ul>	Chile	<ul style="list-style-type: none"><li>• Utilize existing library network</li><li>• Virtual services</li></ul>
Brazil	<ul style="list-style-type: none"><li>• Expanding telephony and broadband services</li></ul>	Korea (Rep.)	<ul style="list-style-type: none"><li>• Extensive infrastructure</li><li>• User accessibility and specialized services</li></ul>
India	<ul style="list-style-type: none"><li>• Installing Kiosks</li><li>• Offer cheap devices</li></ul>	United Kingdom	<ul style="list-style-type: none"><li>• Digital Champion</li><li>• Go ON UK</li></ul>

# Lessons for the United States

- Access

- Expanding Infrastructure
  - Institutional unity, deregulation, competition, privatization, government investment, subsidized loans to telecom operators
- Installing Computers
  - Leverage existing institutions - libraries and community centers

- Accessibility

- Training and education
  - Key factor for increased demand
- Enhance user accessibility and develop specialized services
- Empower community leaders

# Digital inclusion in Texas

# History of PCCs in Texas

- Texas played an early role in encouraging infrastructure and community development around computing and the Internet
- Computer and network access became a focus of government intervention in the mid-nineties:
  - 1995: Austin Free-Net (AFN)
  - 1996: Telecommunications Infrastructure Fund (TIF)
  - 1997: E-Rate and Technology for All (TFA)

# Texas Libraries

- Libraries received and still receive support from E-Rate, TIF, the Texas Book Fair, the Gates Foundation, municipalities, and local patrons
- The most dramatic recent example of innovation at the local level is the recently-revealed plan to turn San Antonio's South Side into the site of one of the country's first bookless libraries: BiblioTech

*“The ever changing landscape of technology means that literacy is no longer about picking up a physical book and being able to comprehend the words; **technology is changing the way we read, learn and thrive as citizens of the 21<sup>st</sup> century.**”* - Bexar County Judge Nelson Wolff

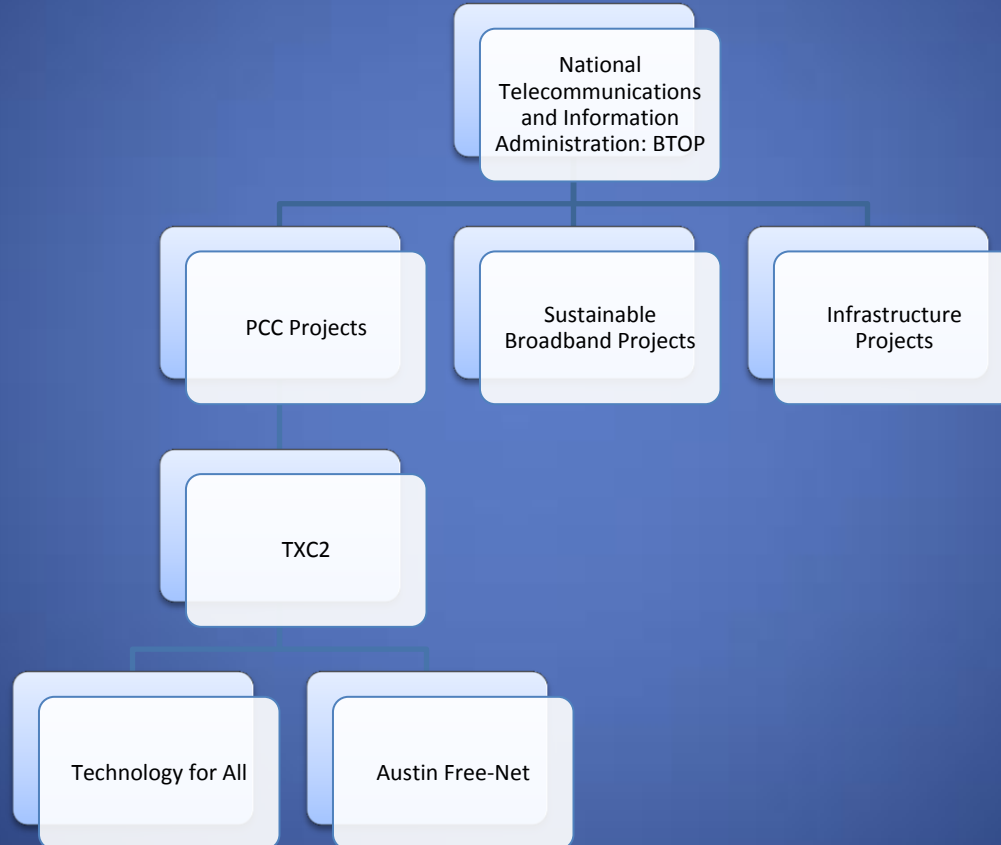
# Texas Connects Coalition (TXC2)

- A coalition formed in 2009 by Austin Free-Net, Technology for All, and a smaller group of rural sites that is no longer maintained under separate leadership (MAIN)
- TXC2 brings together the administration of public computer center sites in urban Texas, including Austin, Houston, and San Antonio, and rural Texas, primarily between and south of the major cities
- Today the coalition represents over 90 sites, coordinating funding as well as reporting to federal administrators

# Broadband Technology Opportunity Program in Texas

- BTOP funds sent to Texas amounted to \$246,729,274
- \$31,910,533 of this went to six Public Computer Center organizations across the state.
- Technology for All, fiscal manager of Texas Connects Coalition, received the largest award - \$9,588,279
- ASR Analytics reports the coalition also raised \$2,671,099 in matching funds

# Mapping Some Relationships





# Broadband Technology Opportunities Program (BTOP) Objectives

- Increase broadband access and adoption
- Provide broadband training and support to community anchor institutions (i.e., schools, libraries, etc.)
- Provide broadband to stimulate demand
- Eligibility Criteria
  - Infrastructure
  - Public Computer Centers
  - Sustainable Broadband Adoption



# Research Design

# Public Computer Centers

## What are “Public” Computing Centers?

- Diverse Site Types:
  - Housing Complexes
  - Multi-Purpose
  - Employment Centers
  - Faith-Based Organizations
  - Libraries



# Methodology

- Research question:
  - How do public computer centers serve vulnerable and underserved populations and contribute to closing the digital divide among users?
- Data Collection – quantitative and qualitative
  - User and Staff Interviews
  - “Yusadge” Data
    - A measure of how often a computer is used, at a given interval
  - Browser Histories



# User Interview Question Types

- Purposes/Patterns of Use
  - What do you generally use the center for?
- User Demographics
  - What is your income, ethnicity, education, age?
- Digital Literacy
  - What is your computer skill level: beginner, intermediate and knowledgeable?
- Social Capital/Communities of Practice
  - Have you brought or made any friends?

# Staff Interview Question Types

- Organizational Communication
  - How do you communicate with co-workers, employees elsewhere?
- Teaching/Training Users
  - With what computer-related skills do users need help the most?
- Other Intermediaries/Partnerships
  - Do you work with or receive resources from other organizations?

# The Texas Connects Coalition (TXC2)

- Austin: 26
- San Antonio: 7
- Houston: 24
- Other/Rural: 33
- Total Sites: ~ 90 sites



# Methodology: Site Selection

- Implementation
  - Total : 18 sites; 82 user interviews and 34 staff interviews
  - Seeking a balanced sample
- Regions:
  - Austin Metro
  - Houston Metro
  - San Antonio Metro and Rural Texas





# Sites Chosen

- Austin Metro:
  - ARCH, DeWitty, Goodwill Norwood, Spring Terrace, Trinity, Ventana del Soul
- Houston Metro:
  - Denver Harbor, Mission Milby, Sharpstown Garden Apartments, Sharpstown Literacy Center, Eastside University Village Community Learning Center, SHAPE Center
- San Antonio Metro and Rural Texas:
  - Bastrop, Bulverde, Ferrari, Haven for Hope, Lockhart, Smithville Recreation Center, St. Mary's

# Methodology: Data Collection

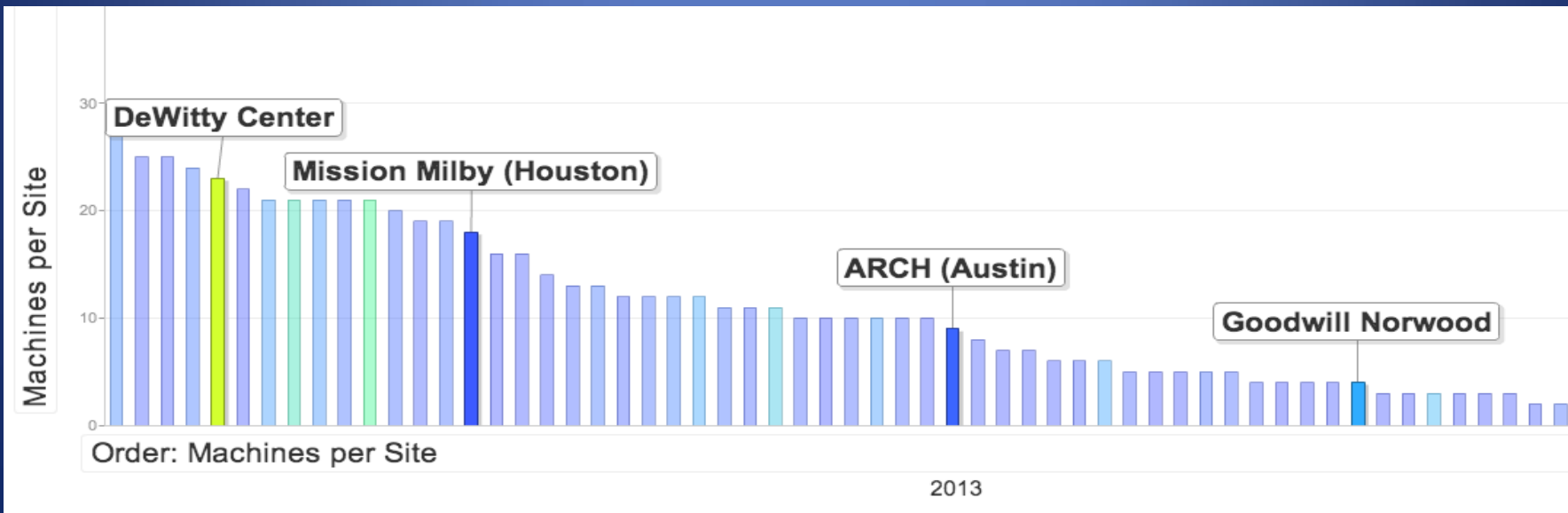
- Interview/Data Collection Process:
  - History of Websites Visited
  - Observation
- Oral Interviews
  - Transcription
  - Response Coding
  - Demographic Questions



# Quantitative Analysis

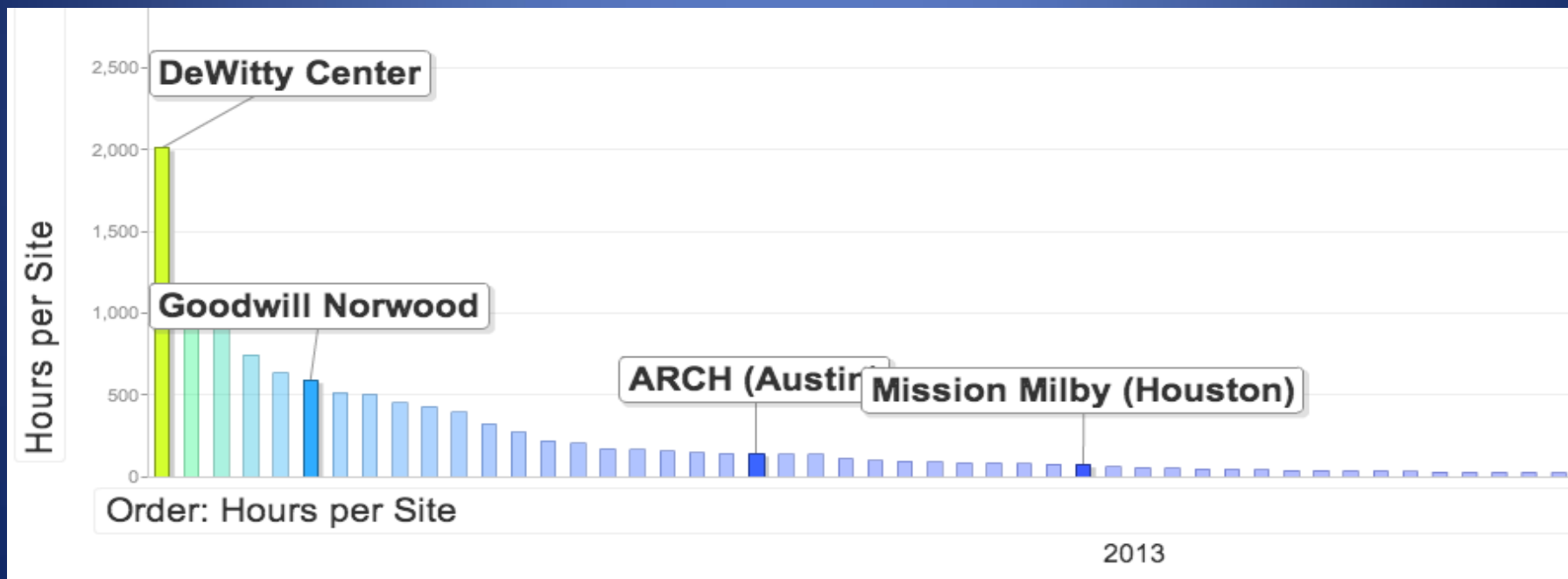
# Site Metrics

- Machines Per Site:



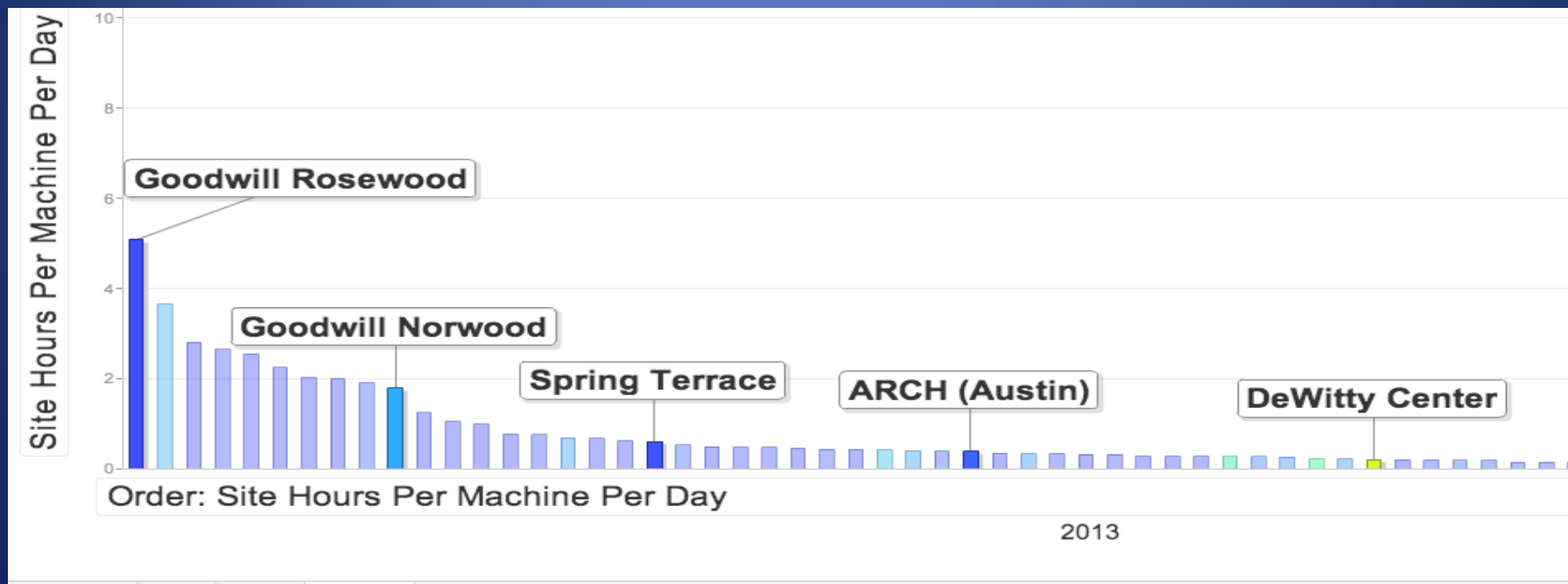
# Site Metrics

- Hours of Activity Per Site:



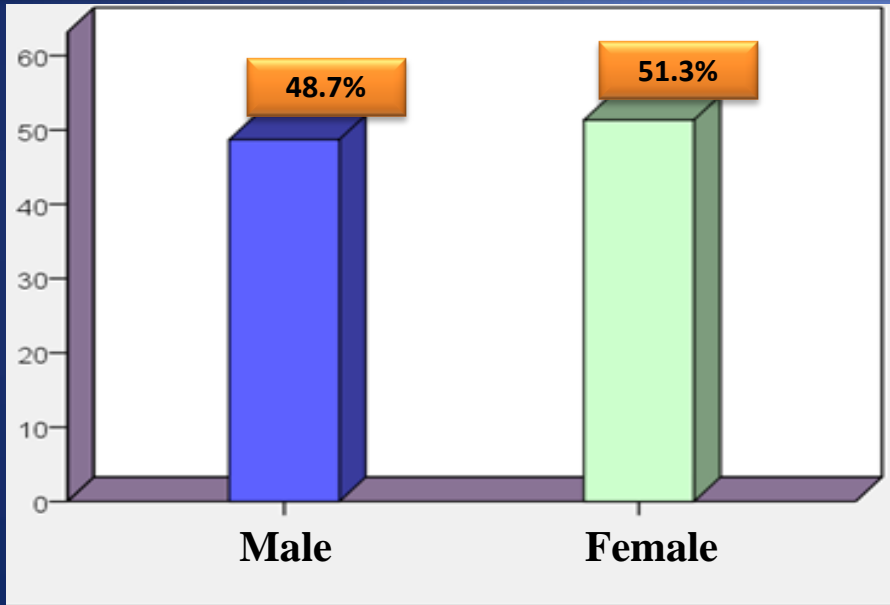
# Site Metrics

- Hours of Activity Per Machine/Per Site:

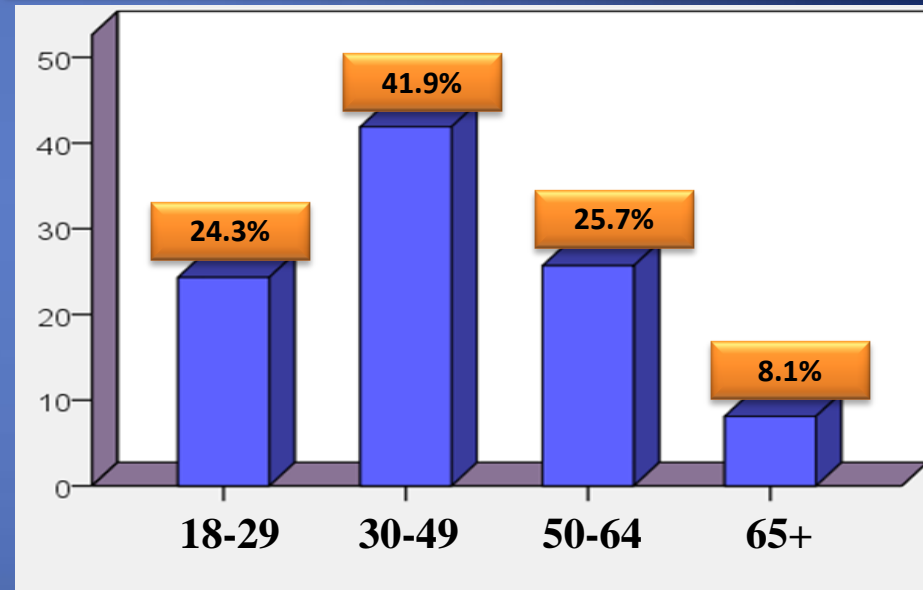


# User Demographics: Gender and Age

## Gender

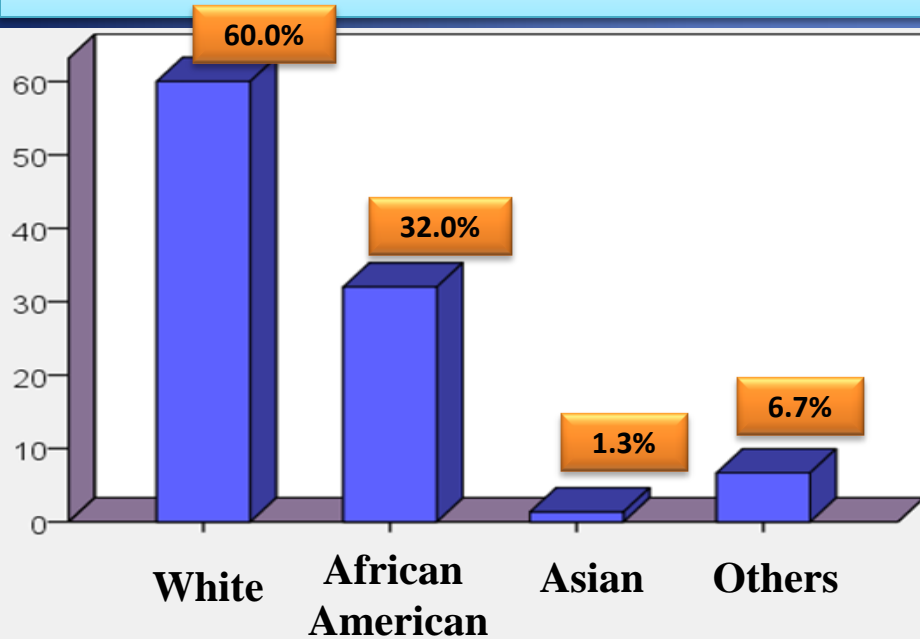


## Age

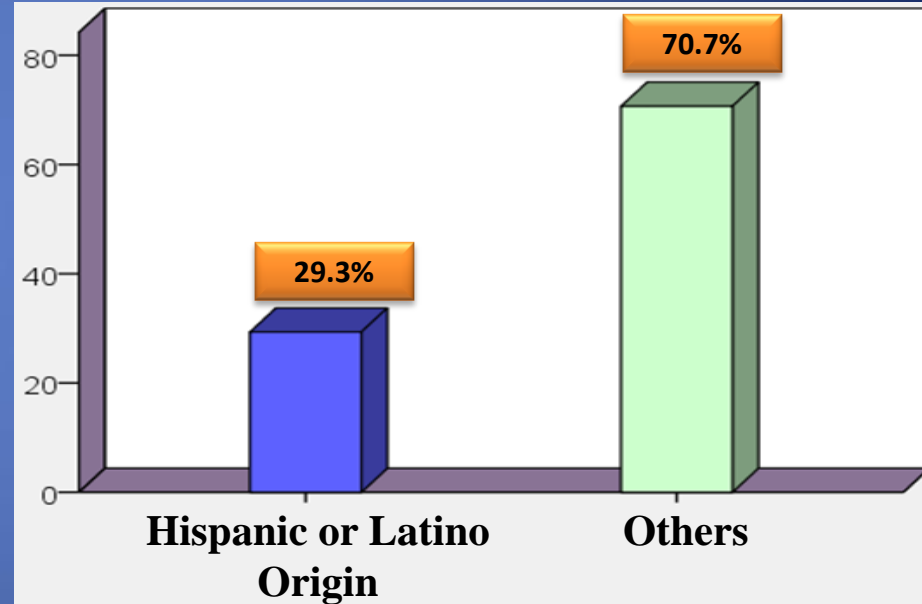


# User Demographics: Race and Ethnicity

## Race



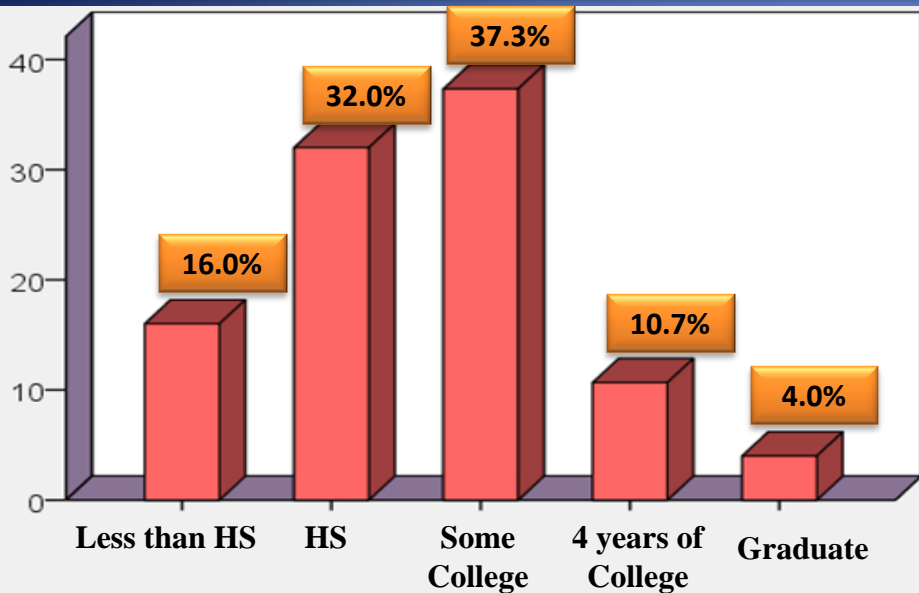
## Ethnicity



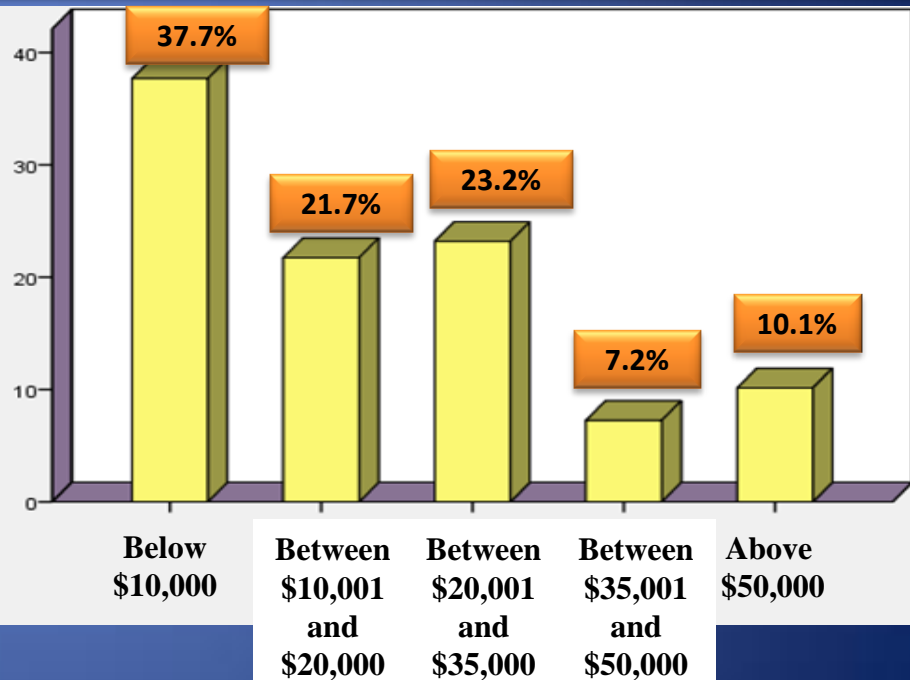


# User Demographics: Educational Level and Income

## Education



## Income



# Strengths and Weaknesses

- Finding a cross-section of sites
- User sampling
  - Lack of “non-user” interviews
  - Users Connecting Wirelessly
  - Users under 18



# Staff Interviews Themes and Findings

# Themes

## 1. Institutional Ecosystem

- Internal and External community and networks

## 2. Flexibility and Adaptability

- How sites relate to and adapt to users

## 3. Outreach and Communication

- Efforts to reach computer users

## 4. Wi-Fi and Mobile

- Changing landscape of technologies and access

# Institutional Ecosystem

## Residences

*“One user said he did not know anything about computers before coming to the center, and can now use Word, use the Internet for searches, and was even in the process of buying his own laptop when I spoke with him.”*

*“You don’t have people who are coming to a place that’s already pre-established as something that functions in a specific way... honestly speaking, a lot of people in this community have never used computers. That’s the truth of a lot of low income environments. Their exposure to something like the Internet nowadays is really through a phone.”*

# Institutional Ecosystem

## Multi-purpose or multi-use centers

Community  
centers

Public services  
centers

Learning and  
literacy centers

Senior centers

Homeless  
shelters

One TFA trainer offered classes for teachers to learn how to put their lesson plans in Excel.

When asked about whether they would still come to the center even if they had a computer and internet access at home:

*"Yes, [because] it's drug free, anti-violence, it's [a] peaceful place."*

*"You know it's both friendly and comfortable. You have peace and quiet you know. And then you have other people around who, they can help you."*

# Institutional Ecosystem

## Employment centers

Job training centers

Ex-offender placement  
facilities

*“Have them on a schedule. Ask them what they need help with beforehand then give them a structured plan. You have a lot of people that cannot focus. You can’t just give them a computer for a half-hour and say, there you go. They will just get on MSN or yahoo and read the news. Which is ok, but it isn’t their purpose.”*

# Institutional Ecosystem

## Libraries





# Flexibility and Adaptability

- On-Site Staff and Volunteers
  - Positions funded by site
- Program Specialists (Trainers/Lab Monitors)
  - Supported by Austin Free-Net and TFA
  - Funded by BTOP

# Flexibility and Adaptability

## Multi-layered staff responsibilities

Site staff:	<ul style="list-style-type: none"><li>• Technology support, program support<ul style="list-style-type: none"><li>• Development/fundraising</li><li>• Reference librarian</li><li>• Intake specialist</li><li>• Social worker</li></ul></li></ul>
Trainers:	<ul style="list-style-type: none"><li>• Training, content development<ul style="list-style-type: none"><li>• Promote PCC and advertise classes</li><li>• Provide training at multiple sites</li><li>• Ad hoc responsibilities</li></ul></li></ul>

## Supplementary nature of public computers

# Flexibility and Adaptability

- **Adapting to the user's skill level and needs**
  - Supporting diverse technology needs
  - Reducing anxiety towards technology
  - Making technology relevant
  - Other user needs (non-technology related)

*"Once you teach someone one thing, it just opens up a floodgate of questions. It goes back to that confidence...**once they have the confidence to ask, they may ask anything.**" - Trainer*

# Flexibility and Adaptability

## Hours and Accessibility

- Hours of operation
  - Some sites not accessible to the general public
    - Subsidized housing projects, senior centers
  - Rural libraries, learning centers have longer hours
    - Some also open Saturdays and Sundays
- Time Limits
  - Typically 30 minutes to 1 hour, some unlimited
- Unique PCC layout
  - Individual work rooms
  - Youth and adult sections

# Outreach and Communication

*"We and our partners have to be welcoming, flexible, aware of our audiences and their issues, and genuine in our passion in order to attract and keep attracting people to these life-changing tools." – Texas Connects Coalition.*

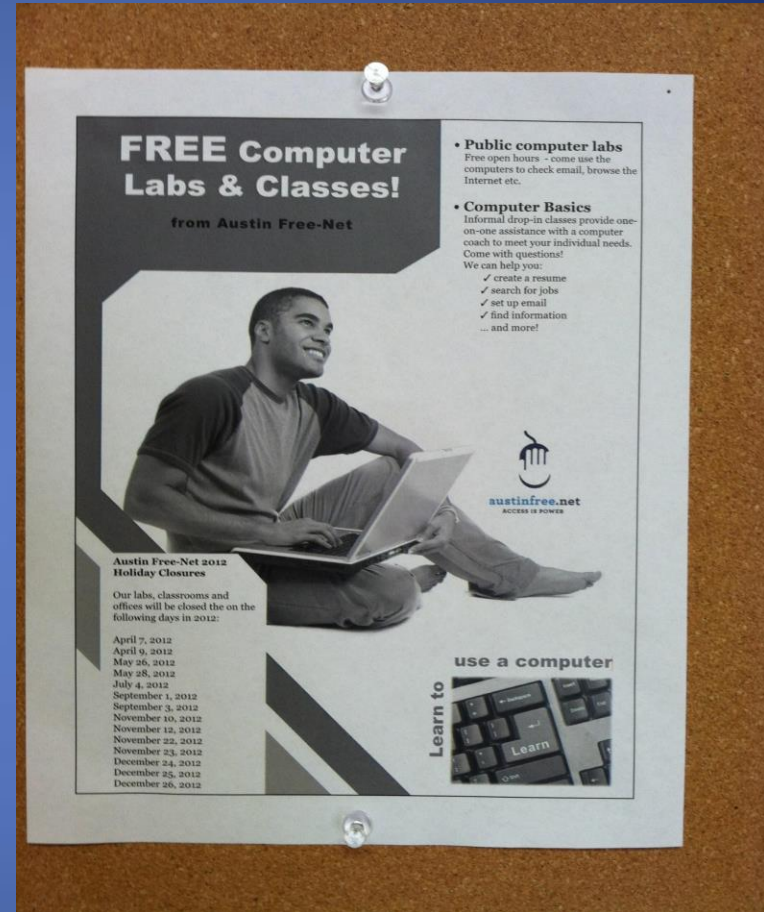
# Outreach and Communication

## Why do people come to a public computing center?

- **Depends on the type of center**
  - Because people who visit each center exist in different communities, how they are reached differs greatly. What works for a library might not work for a job center.
- **Computers are secondary to services**
  - In some locations, data showed that users showed up for other services and the computers were a secondary feature. For example, they'd show up for social services and use a computer after noticing they exist.
- **Center websites and social media**
  - Many of the sites have their own websites and use social media for outreach. However, some reported using the methods mostly to raise funds. Of 82 users interviewed, none said they learned of the center by seeing it on a website.

# Outreach and Communication

- **Flyers and Posters**
  - Several institutions mentioned using flyers to publicize their services. And some users mentioned that they learned of computers at a facility through a printed flyer handed to them at a center. On other occasions, staff members cited going out and handing out flyers.



# Outreach and Communication

## Methods of Reaching Users

- **Case Managers**

- Especially at work centers, case managers point people to the computers and show them how to complete specific tasks.
- *"Last time I was here, there was some lady there, my case manager had this lady helping me applying for a job online."* – Goodwill Norwood user

- **Word of Mouth**

- Staff members cited word of mouth as their best method of reaching out. And users said they'd invited friends and family.
- *"Meredith here ran into me at a shop like an angel and made me come up here."* – Dewitty user



# Wi-Fi and Mobile

## Five Trends

1. Mixed reports on mobile device usage
2. Demographic trends with mobile device usage
3. Younger users ask trainers more questions about mobile tech
4. High variation in costs and benefits
5. Trade-offs between mobile and desktops

# Wi-Fi and Mobile

## Mixed Reports and Demographic Trends on Mobile Device Usage

- Tension between Trainer and User reports
- Empirically supported at Bastrop Library
- Wifi data important for future studies

*“we see so many people using their laptops now. But, even a lot of the older people now are starting to use their iPads. People wander through the library and they’re all on their iPads.”*

*“most of the users here are young and do use smart phones. I teach them how to save their data plans and hook up to the Wi-Fi here at the center.”*

# Wi-Fi and Mobile

## Staff Excitement

*“When Windows 8 released for tablets, I pushed to let our more frequent users know about the technology.”*

*“Touchscreen interfaces are the future.”*

*“At first [users] are scared or intimidated, but once you show them how to move stuff with their fingers and you remove the mouse and keyboard, it takes 10 minutes and they seem rather comfortable navigating around on the technology.”*

# Wi-Fi and Mobile

## Staff Concerns

*"With a tablet, to me, you lose a lot of productivity, you know, from experience...[tablets] have their apps where it kind of looks the same, but not really...to me the iPad, it's just a fun-pad. I don't see it as a productive-pad."*

*"TFA got 10 iPads and 10 Samsung tablets. While users were initially enthusiastic about [the tablets], when they realized they could not keep them or even be sure they got the same tablet to use at a different occasion, they lost interest. The tablets were too personal."*

*"Financially, most of people in the rural areas cannot afford to pay for computers.... But the biggest issue is getting [Internet and cellular] service; like in Centerville, you go a few miles outside the city and you don't get a signal."*

# Wi-Fi and Mobile

## Trade-off between mobile devices and desktops

- Mobile devices leave out older, rural communities
- Desktops leave out many younger users and those inconvenienced by site location and hours of operation

*"However, with the PCC, it is difficult to reach users, particularly the younger users who have the mobile devices and don't need the centers. They can just run around and still get the Internet. Personally, I still want to push for the older users who got left behind. The centers really help them. But installing the infrastructure (the PCCs) is only gonna help those who choose to take advantage of it—so many older users still miss out on the advantages. But that is the same problem with those wanting to fund more tower for wireless signals. So really **both solutions face the same issues**. That is a really tough question."*

# User Interviews

## Themes and Findings

# Themes

## **1. Digital Literacy and Training**

- How do users talk about their computer and Internet skills?
- What help or training do users obtain?

## **2. Users and Sites**

- How do they get here, what do they do, and what are their options?

# Digital Literacy

## Computer and Internet Skills

Basic Computer Skills	Information Processing Applications	Internet Information Skills	Internet Communication Skills
Open & save files	Word (résumé)	Google search	Email (attachments)
Browser operation	PowerPoint	Job related websites (Craigslist)	Social Network Site (Facebook & MySpace)
Typing	Excel	Youtube (music, video, etc.)	
Downloading		Yahoo (news)	



# Digital Literacy

- **Beginner:**

*“Well, see, that was like my first time. But other than that, I had never ever used a computer. I had always had a tough time, you know, with a computer. It was something completely new for me.”*

- **Intermediate:**

*“I’m going to probably have to say intermediate. I’m not really kindergarten, but I’m certainly not college level either...I can use email if there’s not a big glitch. Sometimes I get messages and I don’t know what they mean. And so I will say I try not to do anything I can’t do.”*

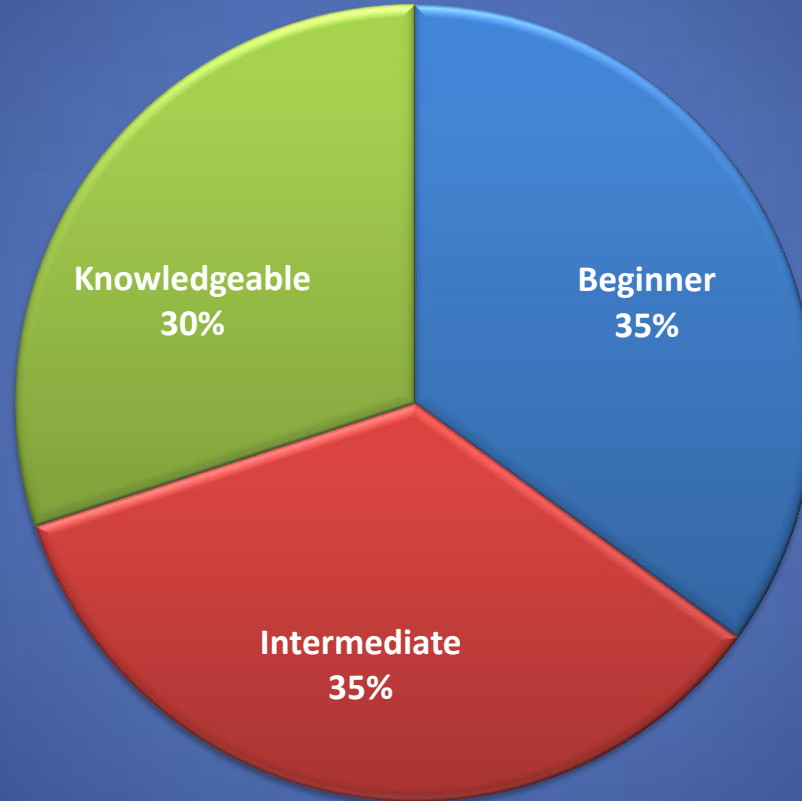
# Digital Literacy

- **Knowledgeable:**

*“Beginner in some aspects, but somewhat knowledgeable. [Beginner] When it comes to coding, or setting stuff up, or something like that. [Knowledgeable] Just on other things...social networks. Like if you need help with Facebook, or MySpace, I’ll be able to help you out. But with other things, like logging in or Word or any of the Microsoft products, I can give you a basic knowledge of.”*

# Digital Literacy

## User Skill Level Distribution



# Help and Training

## Trainer/Staff

- One-on-One Help
- Class-Based Training

## Other Users



# Help and Training

## Trainer/Staff : One-on-One Help

- Technological help

Basic computer skills     → Typing; copy & paste; printing

Non-job related skills     → Email; Facebook

Job related skills     → Job search; online job application; Microsoft Office

- Non-technological help

Non-job related     → GED

Job related     → Job application process; job availability; résumé writing

# Help and Training

## Trainer/Staff : Class-Based Training

- Computer and internet skills classes
  - ➡ typing; Word, PowerPoint, Excel; Internet exploration
- Non-technological classes
  - ➡ Language; GED

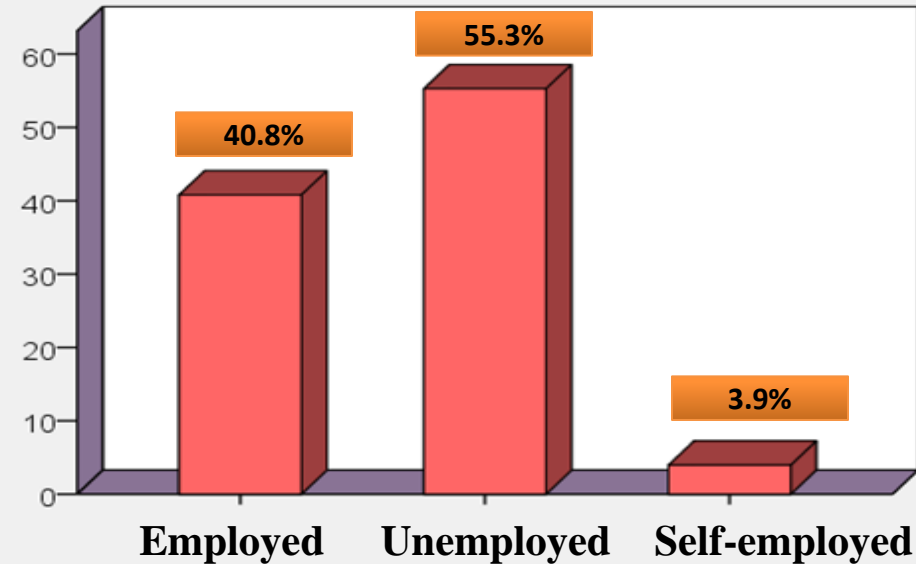
# Help and Training

## Other Users

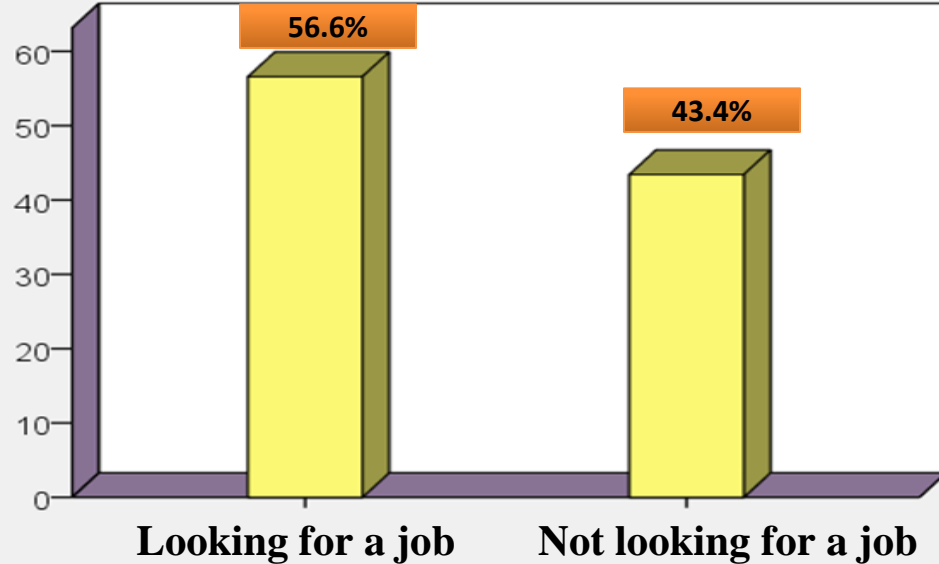
- Occasional interaction with other users for computer and job information help
- On interacting with other users for help:
  - *“I would really try not to do that. Everybody is busy doing their own thing. I would rather speak to the staff. I would go to the library or to the staff to help. You know how quiet it is here so obviously you don’t want to be the one to start talking.”*

# Employment

## Employment



## Job Hunting





# Skills Improvement

## Computer and Internet Skills

- *“I have learned how to copy and paste, how to check my spellings, what windows to click to check that. And I have learned how to look up other resources. How to get to the human resources place I saw on the map. Also the mail that I get from human resource places, I now answer them back on email.”*
- *“Yes, I am more faster now. I use Google and I learned that when you type in a letter, Google can already guess what you are trying to type. That was so cool. I figured it out on my own.”*

## Other Skills

- Résumé writing
- Job hunting and applications

# Sites and Users



# The Built Environment



## Former homeless person

*"I remember when I first walked up to the Arch, I was scared [intimidated]...I didn't want to go inside. You have all these guys just standing outside, doing their drug deals or just standing around doing nothing. Yet on the inside there is the Austin Free Net room and counselors you can talk to...but people choose not to."*



# The Built Environment



## Bastrop Library User Quote

*"Well, it impressed me that we had a lot of teenagers at the computers. And that they would come here...and after school they would pop in here so they were pretty much always occupied. And I was pleased with that."*

# Rural Library Sites

- Typically serve as important social hubs for the rural community
- Many residents have grown up visiting their libraries for various reasons through the years

## User at Lockhart Library

*"My kids like it here a lot. I am pretty much busy on the computer, but I have met friends here and we say to each other hey we are at the library and my kids love coming here because they meet all kinds of other kids here. I think there is a lot of interaction between residents happening here at the library."*

# Urban Sites

- Cities present limited choices about where to go and what to do for the homeless and the ex-offender population
- Sites are sometimes perceived as being 'safe' places to be

## User at Mission Milby

- Bryan: *“Okay, let’s say you have internet access at home, and someone dropped off internet access and a computer. Would you still come to the computer center?”*
- User: *“Mmm, probably, because of the environment.”*
- Bryan: *“Because of the environment? What about it that’s uhhh...”*
- User: *“Because it’s drug free, anti-violence, it’s [a] peaceful place.”*

# Transportation

## Rural

- The average rural user walks or drives to the public library

### User at Bastrop

*"I live around 4 miles away. I generally drive to get to the library."*



# Transportation

## Urban

- Largely dependent on public transport
- Affects frequency and duration of visit

## User at Dewitty

- Preeti: *"How do you get to this place?"*
- User: *"I come on and off. I am on the bus a lot so it takes me a while to get here. I have to ride for a long time."*
- Preeti: *"Is it a long commute to get here?"*
- User: *"Well, not really. I just have a lot to do. With the job search and all. I am on the bus...have to switch buses, so it just takes me a long time to finish everything and get here."*



# Sites: The Inside

## **Working hours** of the sites:

- Affects traffic and use
- Some preference for weekend and late evening hours

## **Report on user at Bulverde**

“The user visits the library on average three days a week but wants to visit more...she is unable to because the library closes early on Fridays and shuts off the computers earlier as a result.”

# Sites: The Inside

## **Time limits on use:**

- Concern especially at urban sites with limited space and high traffic
- Shorter time limits not conducive to job search

## **User at Haven for Hope**

*"You get stuck sometimes when you are filling out an application and you have to stop doing what you are doing because of a time limit. Here you can work at your own pace."*

# Motivations to Visit Site

## **Scenarios for the rural user:**

- Limited/no Internet access at home
- Limited mobile Internet at home
- No home access for desktops/laptop/tablets
- Desktops and faster broadband at the library
- Help from trainers
- Training classes
- Children want to use the computer

# Motivations to Visit Site

Scenarios for the urban user:

- Help from trainers
- Job-search
- Printing facilities
- Computer/GED training classes
- General Internet use
  - Social media, entertainment, gaming, videos
- Other resources offered by the site
  - Free meals, access to showers, mailboxes, telephones, faith and fellowship, help with housing, counselling, mailboxes, paperwork for certificates, free bus passes.

# Options for the Rural User

## Alternative sites

- Starbucks, Schlotzky's, McDonald's

## Conditions for use:

- Possess own device
- Pay for food/coffee to be on premises
- Some degree of proficiency in computer/Internet use

# Options for the Urban User

- Access to devices, Internet, and limited help without payment
  - Libraries
  - Texas Workforce
- Purchase as a tacit condition for acquiring Internet access
  - Starbucks, Schlotzky's, McDonald's

# Conclusions and Recommendations

# Conclusions

- The project is reaching diverse populations
  - Libraries – broad community base; needs related to speed, access
  - Site and service specifics – targeted populations; needs related to tasks
- Training and classes
  - Many users interested in highly specific tasks
  - Role of social media in maintaining clients' engagement and enhancing computer familiarity
  - One-on-one “training” highly valued



# Conclusions

- Organizational
  - Resource/sharing system of nonprofit ecosystems
    - Diverse strategies for supporting services
    - Uneven institutional buy-in and priorities
  - Committed, enthusiastic staff
  - Outreach and Marketing
    - Importance of “word of mouth”
  - Many children/teens using facilities
  - Inconclusive findings on role of mobile technologies in access

# Recommendations

- Metrics and accountability
  - Measuring referrals, repeat users, new users (and whether they return)
  - “Yusadge”
- Put resources where needed most
  - Rebalance computers and training
  - Address transportation challenges
- Identify and attract new potential beneficiaries
  - No “one-size-fits-all” method for increasing volume of users
  - Importance of site-specific strategies
- Broadening definitions of “legitimate” usage

# Questions?

