

2017

DIGITAL INCLUSION STRATEGY

CITY OF SAN JOSE

NOVEMBER 2017

Executive Summary

In 2016, San José's City Council unanimously approved the Smart City Vision. Setting the ambitious goal of making San José America's most innovative city by 2020, this vision focused on embracing technology to improve the lives of residents. However, it also recognized that as we embrace technology, we can't leave people behind. Building an inclusive city, one of the five core pillars of the Smart City Vision, means that we ensure everyone in our city will benefit. As homework, job opportunities, and services are increasingly digital, those on the wrong side of the digital divide will be left further behind.

Broadband internet is no longer a luxury, but an essential onramp to education and opportunity. 70% of homework is online today¹ and students with internet access are 6-8% more likely to graduate from high school. A 1% increase in broadband is associated with 0.3 increase in employment². Therefore, closing the digital divide is imperative to building a smart city that serves everyone.

The American Community Survey estimates that approximately 95,000³ of San José's residents do not have home internet access or an appropriate device as of 2015. But, little to no comprehensive information is available to assess how different segments of the unconnected population in San José access and use the internet as well as what they perceive are barriers to adoption.

This study, conducted in partnership between the City of San José, the Stanford University School of Education, and Great Nonprofits, takes a robust, data-driven approach to analyzing the digital divide in San José. Nearly 700 low-income individuals with school-age children were surveyed in four languages. Additionally, these findings were augmented through focus group discussions and expert interviews with over 100 individuals across 30 organizations in the public, private, and nonprofit sectors. The qualitative research also informed insights around the elderly populations in San José.

The following report provides detailed insights on how San José's low-income population accesses and uses the internet, as well as recommends tangible actions to close the digital divide.

Top 10 findings:

1. Today, 72% of the San José population has access to broadband at home, with the remaining relying on free Wi-Fi (9%), mobile phones (15%), or no access at all (4%)
2. Black and Hispanic families, as well as extremely low income families (<\$15K) are more likely to lack internet access relative to other groups
3. Cost of service and the cost of devices are, by far, the top two barriers to broadband adoption

¹ Add NYT article

² Brookings Institute

³ 2015 American Community Survey

4. Many low-income families cannot afford current \$10/month low-cost plans with roughly 60% of respondents reporting they can only pay below \$9 dollars per month
5. Many low-income families, especially in the Hispanic community do not understand the benefits of broadband access or that it is essential to complete homework for students today
6. Contracting and the sign up process itself, as well as fears around safety and cyber-bullying also discourage adoption
7. Most low-income adults without broadband, access the internet at work because it is most convenient and, to a lesser degree, through libraries and spaces that offer free public Wi-Fi
8. Low-income children without broadband have unpredictable, unreliable access to the internet to do their homework through friends and family or schools with limited hours
9. Children rely on laptops to complete their homework and children without laptops are at a disadvantage to their peers; mobile phones were predominantly used socially
10. Mobility is a key barrier for elderly populations accessing the internet as well as the lack of products, services, and digital literacy training tailored to their needs

Recommendations:

There is no silver bullet to closing the digital divide in San José, however a better coordinated effort across the public, private, and nonprofit sectors could significantly close the gap. Building a “collective impact” organization that focuses philanthropic, corporate and public dollars in areas of highest need and across different barriers to adoption would be much more effective than the ad hoc programs that exist today. Although many targeted programs are currently available in San José, for example a plethora of coding camps for children, few programs exist to provide devices and basic connectivity to low-income and other vulnerable groups. Each stakeholder has a unique role to play, which are highlighted in detail in the recommendations section of this report.

In the near term, the City of San José can act as the backbone to coordinate the efforts of the collective impact organization. Seed funding the efforts in the public library, for example, would allow for coordinating efforts across the city with community organizations. Further, a centralized point of contact to coordinate broadband efforts in the city would help to ensure coordinated and impactful broadband investment that benefits all populations in the city.

This document presents a roadmap to close the digital divide in San José based on the substantial consumer insights research conducted in low-income populations and with experts across sectors in the San José community. Our hope is that as we build the city of the future, we make sure that all San José residents benefit.

DEFINITIONS:

Extremely Low Income Households (ELI): Households with less than \$25,000 in household income.

With At-Home Internet Access: Households that reported having an internet connection from either a broadband subscription or a mobile connection.

Without Home Internet Access: Households that report not having any internet access at home, wired or wireless connections.

Homes with Broadband: Households that reported having a broadband subscription.

OUR APPROACH:

Although digital inclusion insight and survey results are available at the state and national level, few are granular enough to give individual cities enough information to bridge the digital divide in their own communities. The communities within each City and State present both similarities and striking differences. Ultimately, local solutions require local insight. A top priority for the City of San José was to create a methodologically sound process to produce reliable data to craft city policy prescriptions around closing the digital divide in San José. This process was intentionally rigorous, critical, and comprehensive.

A key component in the City's strategy involved conducting street surveys specifically targeting low-income adults with school age children to gain insights into closing the homework gap and addressing barriers to internet access not only from a child's perspective, but from parents' as well. The City partnered with two major organizations to execute these surveys: (1) Thomas S. Dee, PhD, Professor of Education at Stanford University, Director of the Stanford Center for Education Policy Analysis (CEPA), and a Senior Fellow at the Stanford Institute for Economic Policy Research (2) Citizens Insights a nonprofit that provides research and tools to enhance social programs. The City of San José assisted these two groups by providing the research goals and question types for the survey.

Survey questions focused on access, usage, and barriers to internet adoption for low-income San José residents with school age children. Surveys were conducted in English, Spanish, Vietnamese, and Chinese. The process for deploying these surveys was simple. First, contacts received a message via text, in person, or doorstep flyer. These messages invited them to get a \$5 incentive for completing a survey. Contacts were invited to opt in to the survey by texting. Survey questions were then sent to participants' mobile phones. Participants answered by texting back their answers. Most questions required selecting multiple choice options. The survey length was up to 28 questions and took an average of eight minutes to complete. Participants who completed the survey then received a \$5 Target gift card.

To provide population-representative estimates, the City's methodology constructed a weighting adjustment using data for San José from the American Community Service (ACS). The City identified 42 race by income cells (7 race ethnicity categories by 6 income categories). Then, the City matched survey respondents in these cells to ACS estimate of that cell's share of the San José survey-eligible population. Constructed weights were based on this data.

To augment the survey's results and gain perspective, the city also engaged over 100 individuals across 30 organizations in focus group discussions and structured interviews. These focused on digital inclusion programs including: local school districts, telecom service providers, community based organizations, libraries, community centers, county offices of education, and regional transportation offices.

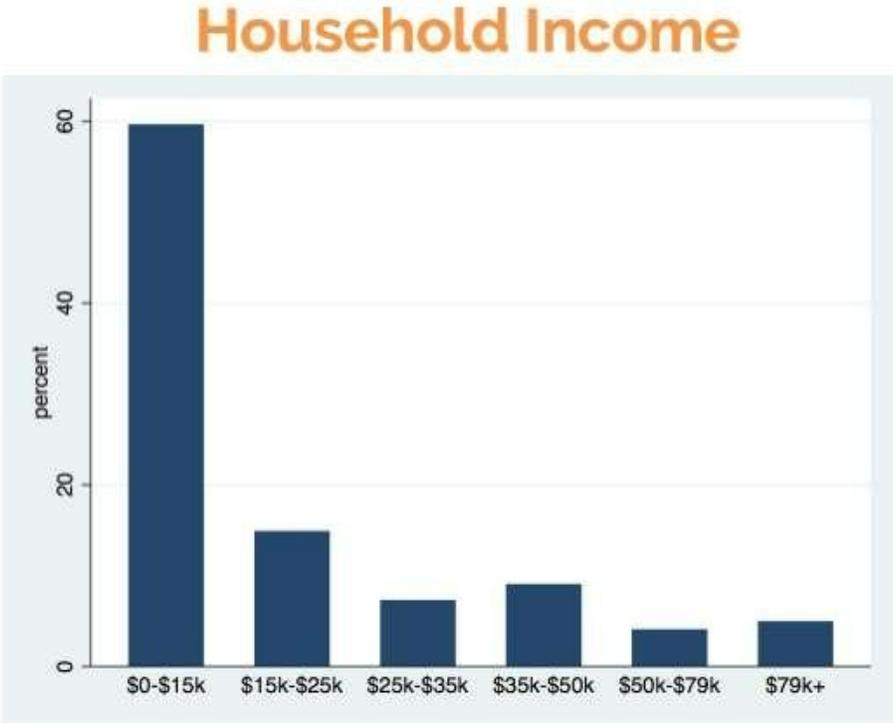
Unfortunately, the city lacked the funding for quantitative surveys for seniors and people with disabilities in San José. Instead, focus group discussions and interviews with organizations serving these populations were used to gain insights into how to close the digital divide for these segments.

For a full list of focus group participants and expert interviewees, please see the end of this report.

RESEARCH FINDINGS:

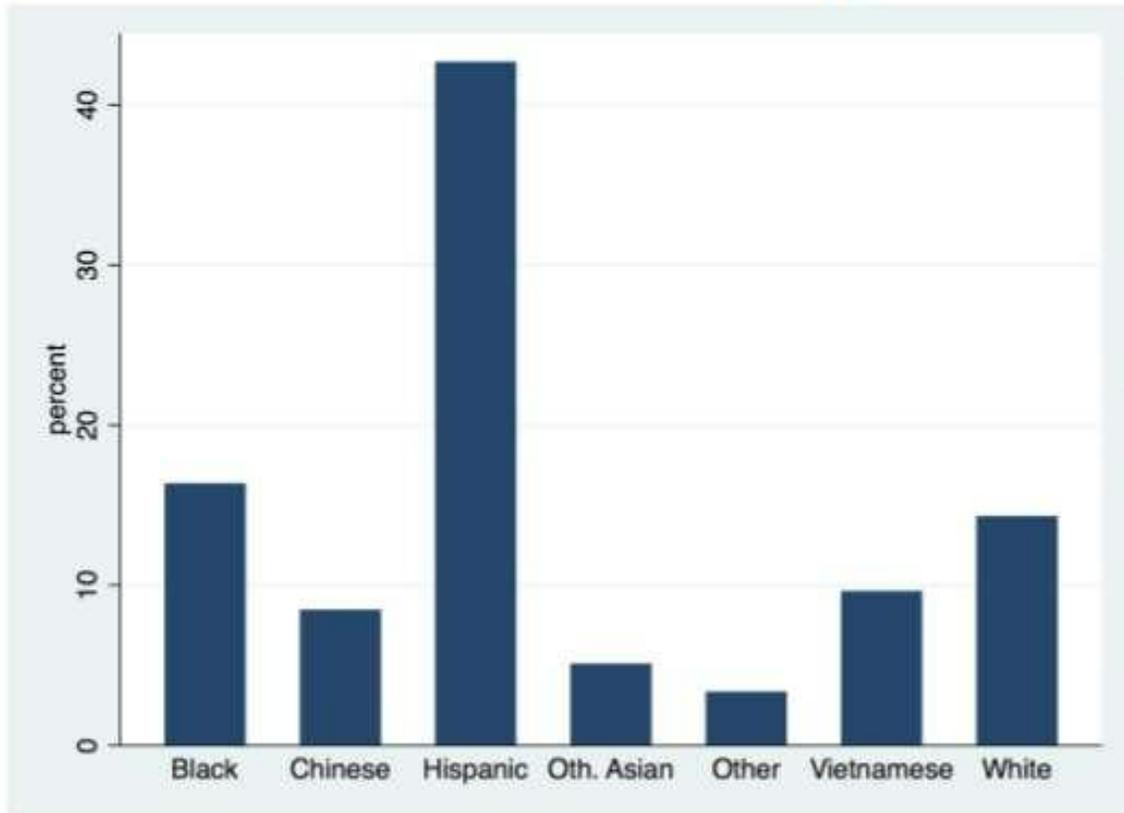
Overview of the target population

Of the 684 low-income individuals surveyed, more than 40% identified as Hispanic or Latino; and 15% as Black, and 10% as Vietnamese. Roughly 75% of survey respondents had household incomes of less than \$25,000 per year. All have school-age children.



[Table 1: Household Income of Target Population]

Race/Ethnicity

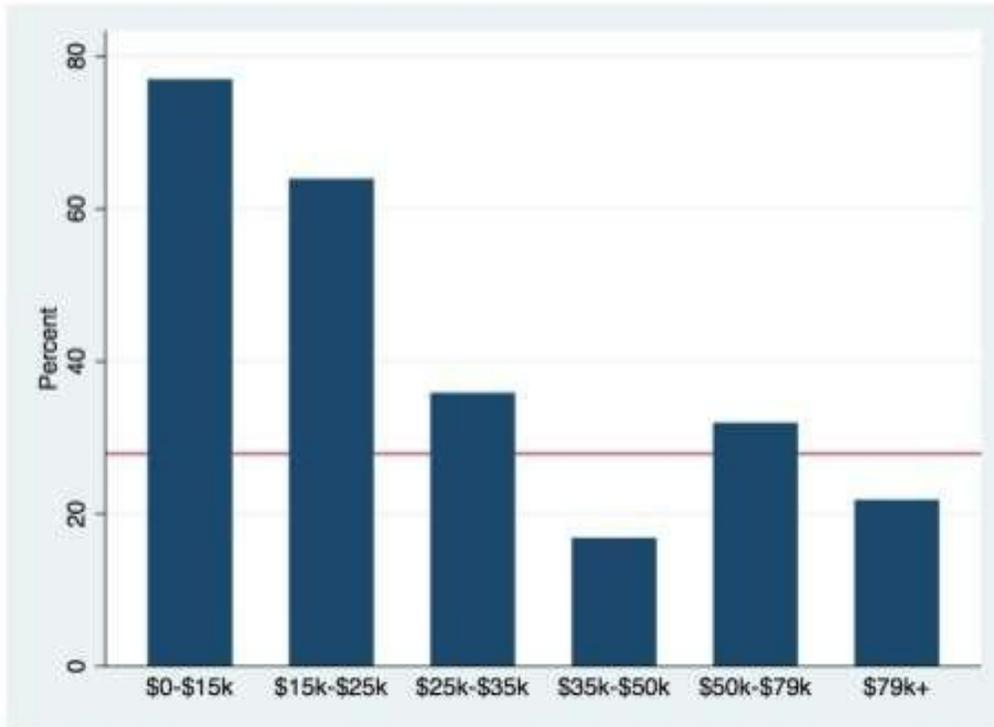


[Table 2: Race and Ethnicity of Target Population]

How many of the low income population in San José have access to the internet?

Looking at the overall population in the city, 72% of San José parents report having broadband access at home. Those who lack access at home rely on free Wi-Fi (9%), mobile phones (15%), or don't have any access at all (4%). Lack of at home internet access is highly concentrated in extremely low-income (ELI) households. Our findings indicate that households with incomes less than \$15,000 have close to an 80% likelihood of lacking broadband at home.

Who Lacks Broadband at Home?



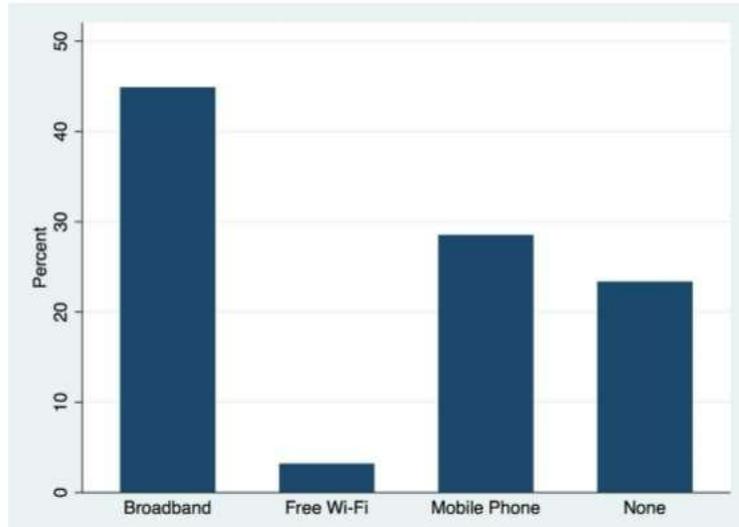
*The differences shown above are statistically significant $\chi^2(5, N=678) = 170.3, p < .001$

[Table 3: Broadband Exclusion by Income]

When looking at those in the low-income population who make less than \$35,000 per year, just 45% report having broadband access at home. Within this population, those without broadband access at home report a higher reliance on mobile phones for access to the internet – nearly 30% or double the levels found in the general population.

Internet Access at Home?

Among SJC parents with less than \$35k in household income, 45% have broadband while 29% rely on phone access (n=7,700) and 23% report no access (n=6,300)

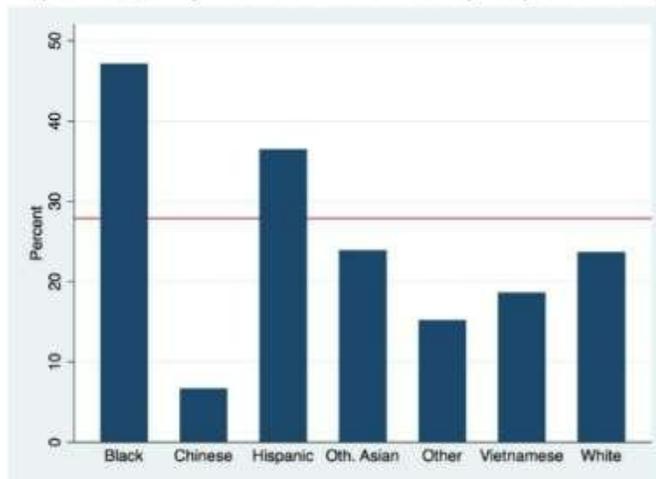


[Table 4: Internet Access at Home Among Households with Less Than 35K in Income]

Black and Hispanic/Latino populations are also more likely to report lacking broadband access at home relative to other low-income groups.

Who Lacks Broadband at Home?

Black, and Hispanic parents are also particularly likely to report lacking Broadband access at home ($p < 0.01$). Only modest differences by respondent's age ($p = 0.55$)



*The differences shown above are statistically significant $\chi^2(6, N=878) = 52.5, p < .01$

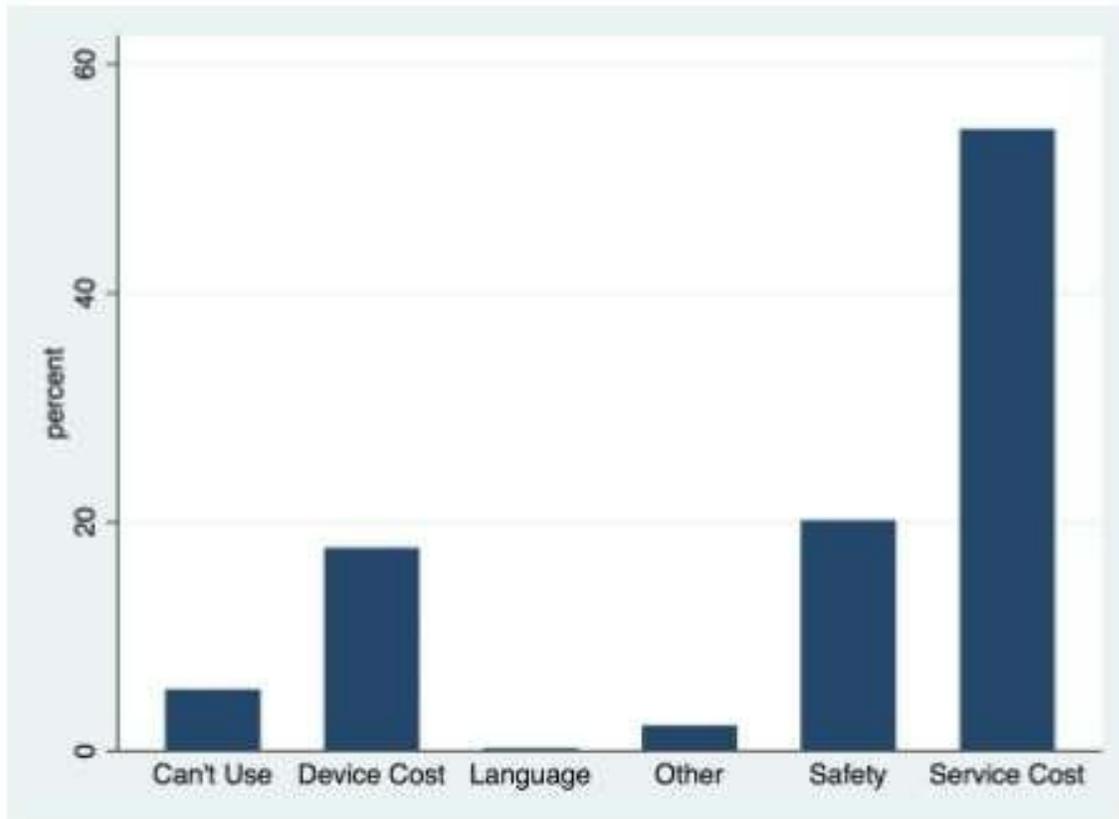
[Table 6: Broadband Exclusion by Race]

What are the barriers to access to the internet for low-income populations?

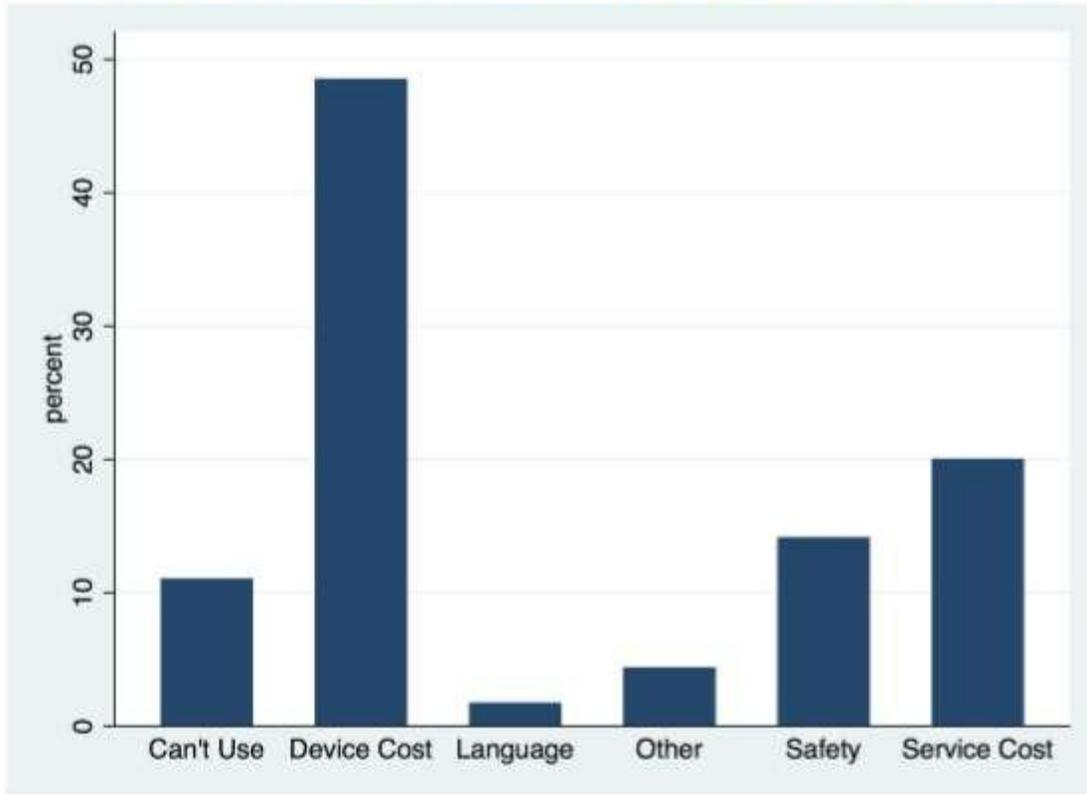
Cost Is the Number One Barrier in Bridging the Digital Divide

Our research tells us that the number one barrier across all demographics is service cost. Over 50% of respondents cited service cost as their number one barrier to internet access at home. When respondents were asked what their second biggest barrier to internet access is, 48% of participants cited device cost. Meaning, both service cost and device cost serve as the top impediments to digital inclusion in San José. Notably, not knowing how to use the internet was one of the lowest reported reasons. In fact, those without broadband at home highlighted internet use at places like work or the public library, indicating that the issue for them is device and service cost related. Meaning, San José's population is capable and ready to digitally participate, but need a more affordable vehicle to do so. Focus groups and interviews cited a general lack of awareness of existing LifeLine programs and private sector digital inclusion offerings thereby contributing to the cost barrier. When financial decision makers, usually parents, are made aware of the value proposition of home broadband and the associated discount plans, they are much more likely to sign-up.

The Top Barrier to Internet Access at Home?



The Second Barrier to Internet Access at Home

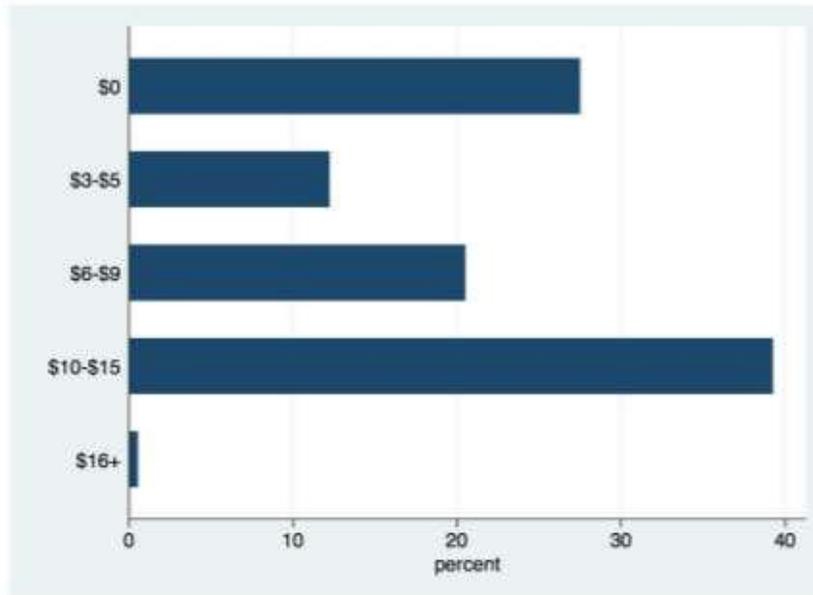


[Table 8: Second Most Significant Barrier to Internet Access at Home]

Low-income populations have very limited ability to pay for broadband

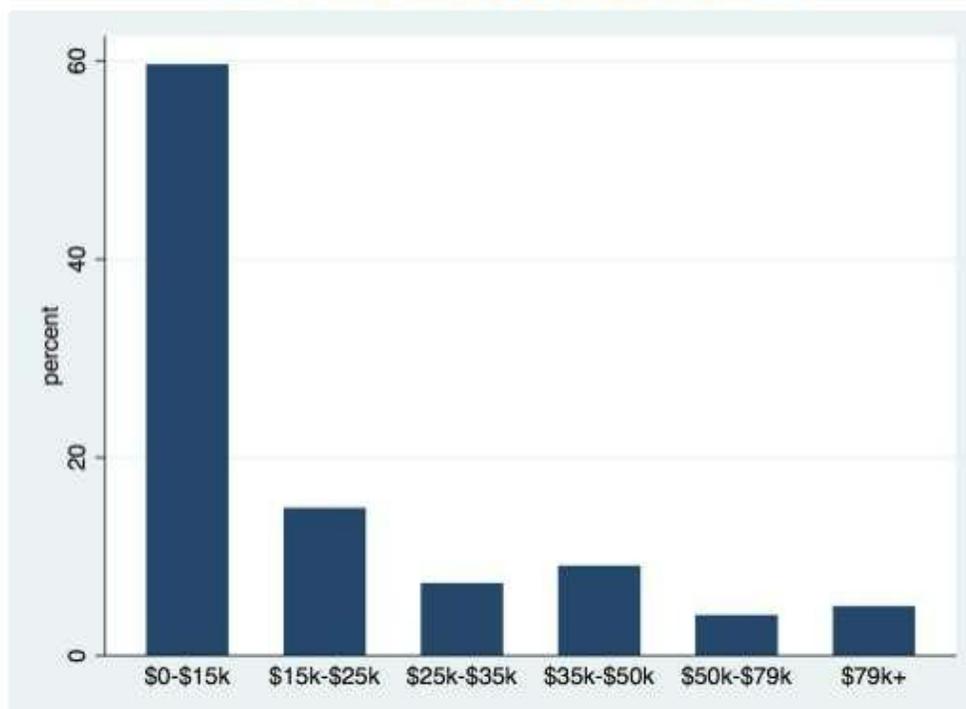
The most important finding from our data is that participants' willingness to pay is below the price point of many low-income programs provided by ISPs e.g. Comcast essentials which costs \$10 per month. The data shows that in homes without home access, roughly 60% of respondents can only pay below \$9 dollars per month. Broken down further, 28% said they cannot afford to pay anything on home access and 12% said they can pay between \$3 to \$5. Together, this means that 40% of the disconnected population can only afford less than \$5/month – which is significantly far away from being close to affording low-income programs. Public and private institutions will need to respond appropriately to these realities in designing low-income programs for full community penetration.

Understanding Willingness to Pay



[Table 9: Willingness to Pay for Broadband Among Low-Income Population]

Household Income



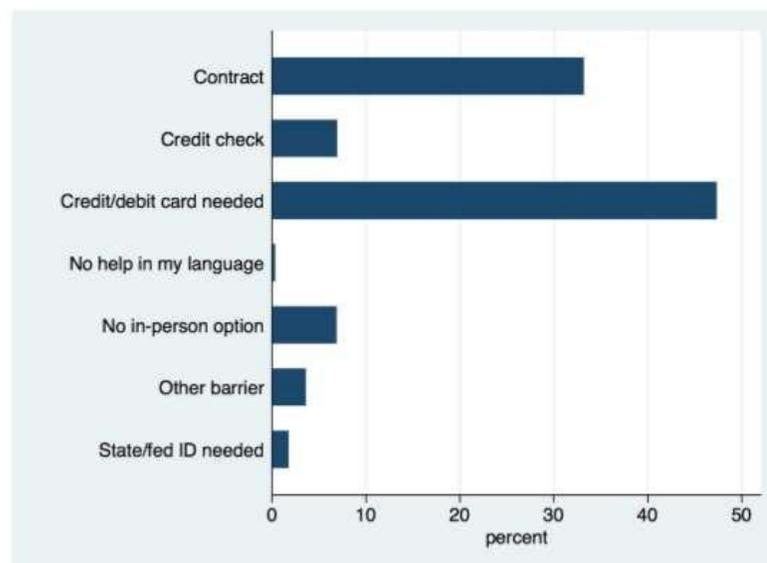
[Table 10: Household Income of Those Without Broadband at Home]

Sign on process is a perceived barrier particularly amongst the Hispanic/ Latino population

In homes without access, our research found that the perceived requirements in the sign on process serve as barriers to access. For roughly 48% of our participants, needing a credit or debit card was seen as an impediment to getting connected. Our focus groups confirmed this with participants citing that “trust issues and the process gets in the way” as “the need to volunteer identification, credit/debit cards, bank accounts, and contracts” deters some residents from enrollment. Not all of San José’s residents have bank accounts, credit cards, or are comfortable giving out the details of their accounts. The good news here is that not all low-income ISP programs require this information. For example, Comcast Essentials does not require this information. The issue going forward will be about identifying ways to communicate that this is not a requirement. Additionally, other sign up procedures like needing to sign a contract registered as a barrier for 32% of participants, followed by requirements around credit checks and there not being an in-person option accounting for roughly 7% each. In total, over 90% of participants cited an aspect of the sign up process as a barrier to having internet at home. This finding was validated in our focus groups as well with participants reporting that “the complexity of the sign up process” overall serves as a barrier and needs revision. In addition, many of the community based organizations expressed frustration with the telco sign-up process for discounting plans citing the application was complex; time consuming; processing time too lengthy; and the income-verification requirement too burdensome that the under- served abandoned the process of getting discounted internet.

Barriers to Internet Plan

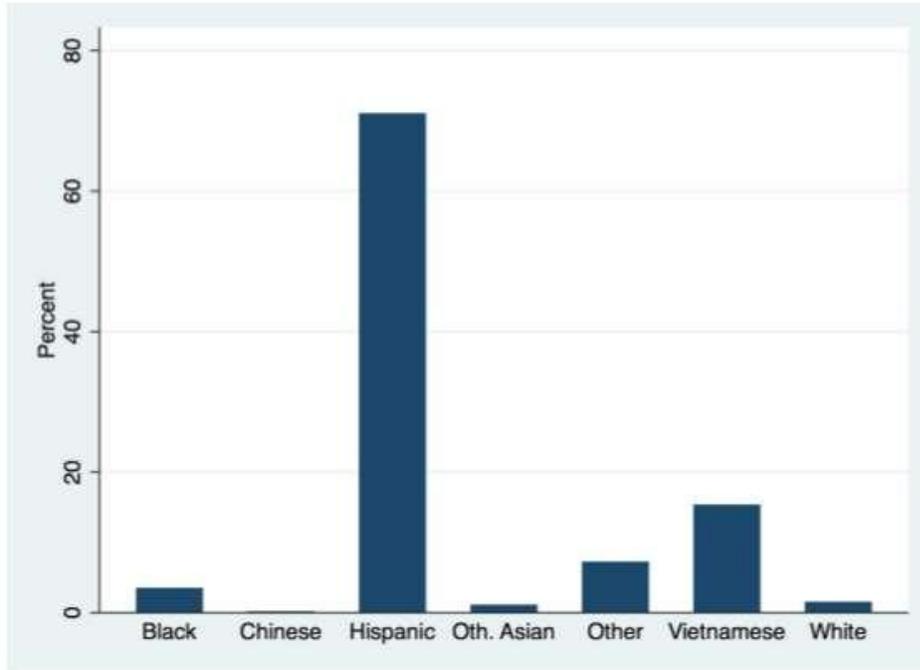
In homes *without* access, financial constraints (lack of credit/debit card, contract) are predominant reason for not having an Internet plan.



[Table 11: Barriers to Internet Plan in Homes Without Access]

Barriers to Internet Plan

Households that report lack of a credit/debit card as a barrier are predominantly Hispanic



[Table 12: Credit/Debit Card Barrier by Race]

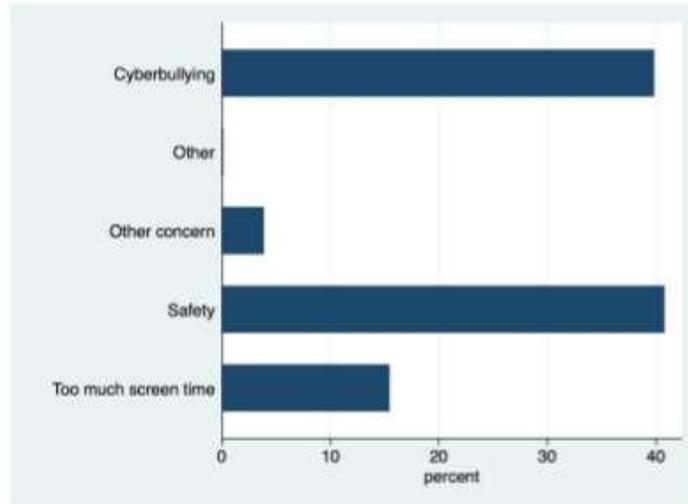
Fears around safety and cyber-bullying

Our research finds that parental fears around safety and cyber-bullying create barriers to internet access. Our focus groups reported that “safety and privacy concerns, especially for children” deter some residents from investing in broadband connections. The good news about “safety” is that this concern is not raised after families are exposed to internet at home. 40% of parents without home internet access see cyberbullying as a major concern for access. Additionally, little over 40% of other parents cited “safety”, broadly, to be their major concern for access. Cumulatively, then, 80% of parents without home internet access see online threats to be a key issue. This concern drops dramatically after families get connected: cyberbullying fears drop from 40% to 18%; safety drops from 40% to 34%. Notably, “too much screen time” jumps from 15% to almost 40% - meaning, once families get connected, parents find it difficult to keep students off the internet. From a digital inclusion perspective, this is a good problem to have. Focus groups cited that lack of a technical support capability for the digitally under-skilled also contributed to safety concerns.

Perceived Threats of Internet Access

Parents without home Internet access see cyberbullying and safety as major concerns of access.

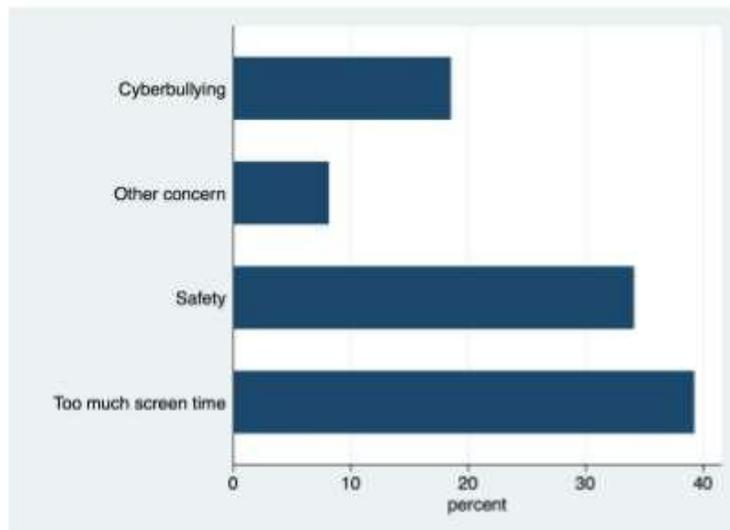
Black parents also see screen time as substantial concern.



[Table 13: Perceived Threats of Internet Access in Homes Without Internet]

Perceived Threats of Internet Access

In homes *with* Internet access, the overuse of screen time is a more prominent concern than safety issues.



[Table 14: Perceived Threats of Internet Access in Homes with Internet]

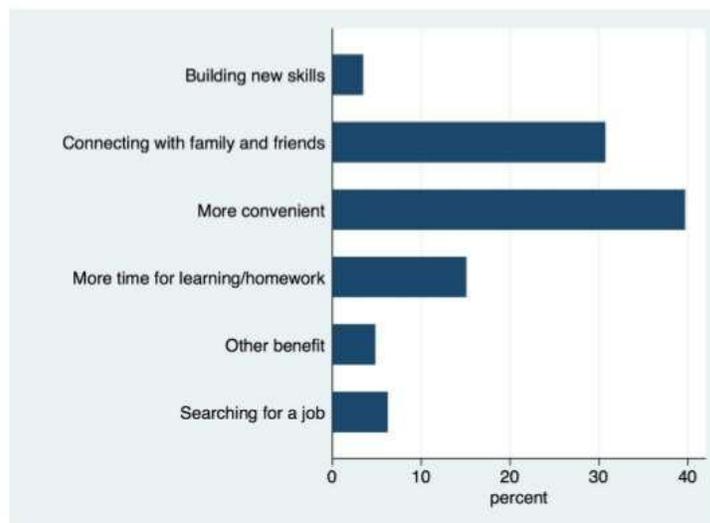
Lack of understanding of the benefits of internet access

Our research reveals that parents without home internet access are more likely to cite connecting with friends and family and overall convenience as reasons for getting a home internet connection. Notably, parents do not view learning, homework, or the development of new skills as primary reasons for establishing a home connection. With only 15% of these parents citing learning and homework, not enough parents are connecting the importance of a home internet connection to educational attainment for their children. Further, only 7% see home internet access as being important for employment searches – meaning that either these parents are secure in their employment prospects or that they are under-informed on the resources available related to job searches on the internet. Additionally, less than 5% see building new skills as a primary benefit of home internet access – meaning parents aren't viewing the internet as important for their own professional development nor are they seeing the internet as important for the development of new skills for their children. Focus groups cited similar issues with participants citing that a “lack of awareness of the degree of the problem and the associated economic opportunity” serves as a primary barrier in getting families connected. The implication is that more must be done to communicate to parents that the internet can help them in their professional advancement and also help their children in school. Focus groups further identified that the entire family should participate in digital literacy and awareness education starting as early as the third grade when parents are most engaged with their children at school.

Perceived Benefits of Internet Access

Parents without home Internet access are more likely to see benefits in terms of connections with friends and convenience, not their child's learning.

Convenience particularly relevant among black respondents (see Appendix Table 4).



[Table 15: Perceived Benefits of Internet Access in Homes Without Internet]

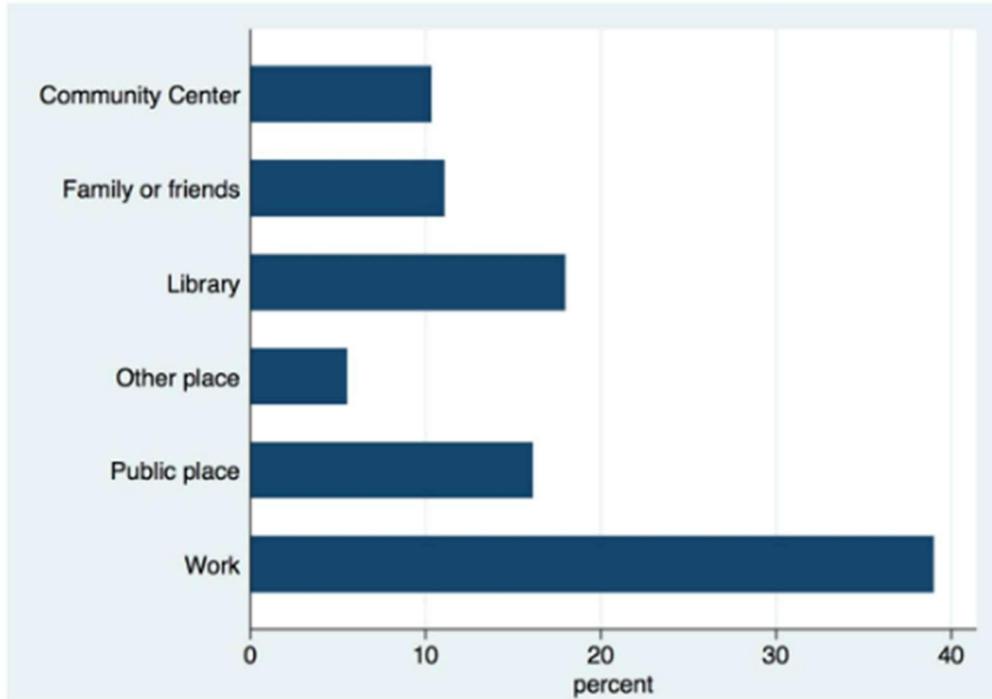
How do low-income populations access and use the internet today?

Where else do low-income populations access the internet for free?

Our research shows that in San José low-income populations without home internet access are forced to rely on using the internet in alternative spaces. For parents without home internet access, work serves as the primary medium for getting online for close to 40% of our participants. This is followed by libraries with 18%; public places with 16%; family and friends with 11%; and community centers with a little over 10%. Added together, public facilities – libraries and community centers – account for roughly 28% of alternative access points for parents. As cities constantly grapple with budget cuts, relying on these spaces can be unreliable as service cuts mean a reduction in facility hours. Focus groups and interviews identified a general lack of awareness of the alternatives options for home internet access. For example, public computing facilities within community based organizations and public facilities such as CreatTV go largely unused partially due to lack of awareness. It was also noted the public computing facilities must be viewed as safe places. Government institutions can discourage engagement especially with the Latino community.

The Current Alternatives to At-Home Internet Access

Nearly 40% of those *without* at-home Internet rely on access at work. Libraries and public spaces are secondary sources.



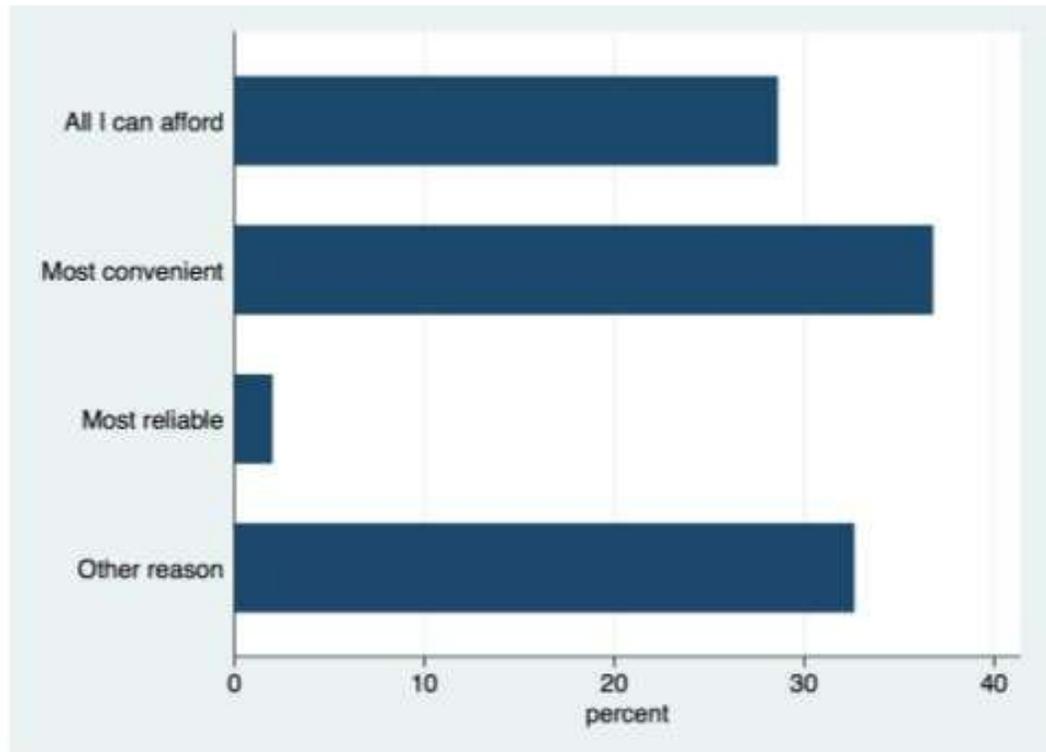
[Table 16: Alternatives to At-Home Internet]

Why do low-income populations rely on mobile?

15% of our parents reported having home access but only through a mobile connection. For these parents, convenience and affordability were cited as primary reasons for relying on a mobile connection instead of establishing a home broadband connection. 29% of these parents reported that it was a cost issue, while 36% of these parents reported mobile being more convenient.

Lack of Broadband in Homes with Access

Among 15% of parents who report home access through a mobile plan, convenience and cost are primary motivations.



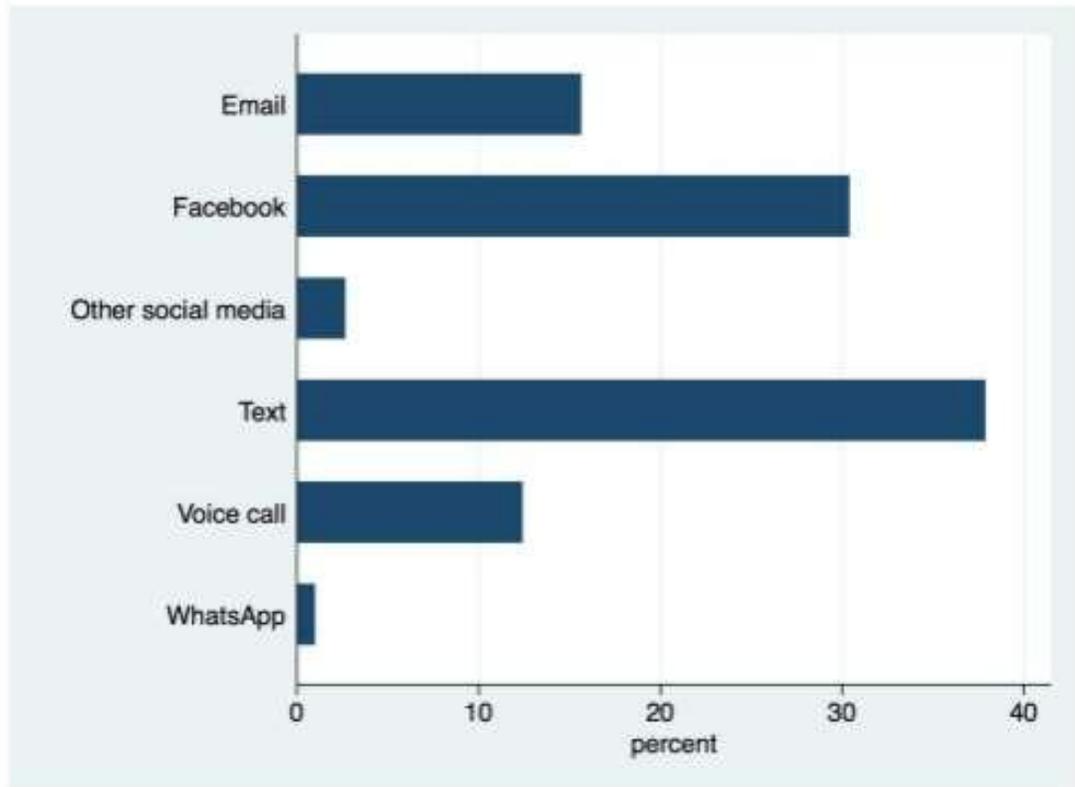
[Table 17: Reasons for Lack of Broadband in Homes with Mobile Internet Access]

What applications do parents typically use?

Our data shows that parents without at-home internet are mostly using applications that enable them to communicate with their social networks via texting and Facebook. Increasingly, communication is being leveraged through online platforms; voice calls, for example, ranked 4th amongst these parents when asked how they communicate with their networks. This underscores implications for how to reach these communities, particularly marketing campaigns that highlight information related to getting connected such as broadband is essential for school work, broadband is important for professional development, ISPs don't require credit or debit cards, etc.

How Parents Interact with Friends

In households *without* at-home Internet, parents most often communicate with friends through texting and Facebook.



[Table 18: Communication Interaction in Homes Without At-Home Internet]

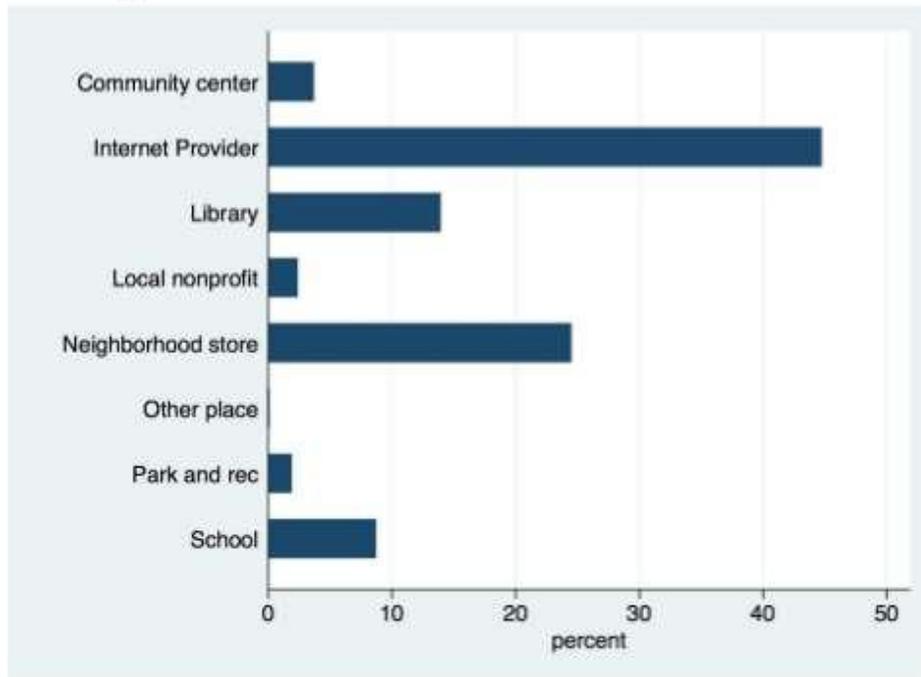
Who do they trust for internet sign ups?

Our research indicates that parents in the community, contrary to what conventional assumptions may indicate, trust ISPs. 45% of parents reported trusting ISPs to sign up for the internet. Our research also indicates that parents have a high degree of trust in local stores; with 24% citing these spaces as the second most trusted place to sign up for the internet. This means that local stores could serve as a potential community option for accelerating internet sign-ups in San José.

Who Is Trusted for Internet Sign-up?

Parents are much more likely to trust private actors (ISPs, local stores) than schools and community centers for Internet sign-ups.

Trust in neighborhood stores concentrated among Hispanics (see Appendix Table 3)



[Table 19: Parent Trust for Internet Sign-Ups]

How do low-income children access and use the internet?

Homes with internet access

Our research shows that in homes with internet access, desktops and laptops are used by students to complete their homework assignments. Computers – whether they are desktops, personal laptops, or laptops provided by a school – were reported as the type of device used to complete homework for 65.9% of student respondents. By contrast, smartphones are used by 8.2% of participants and tablets by 7.6% of participants. This tells us that students require traditional computer hardware to complete their homework. These facts remain unchanged from how students access internet: 61.5% of those with broadband, 98% of those who rely on Free-WiFi, and 67.7% of those who rely on their mobile phones for home internet access use a computer device for completing their homework. While it is true that tablet and mobile phone technology is rapidly improving and competing with traditional computer usage in other Silicon Valley markets, the facts on the ground for students and their homework are clear: students need

computers for their homework. When thinking about programmatic interventions to bridge the digital divide and solve the homework gap, it is important to be cognizant of this device data.

Appendix Table 1 – Device Used for Homework and Corresponding Internet Type

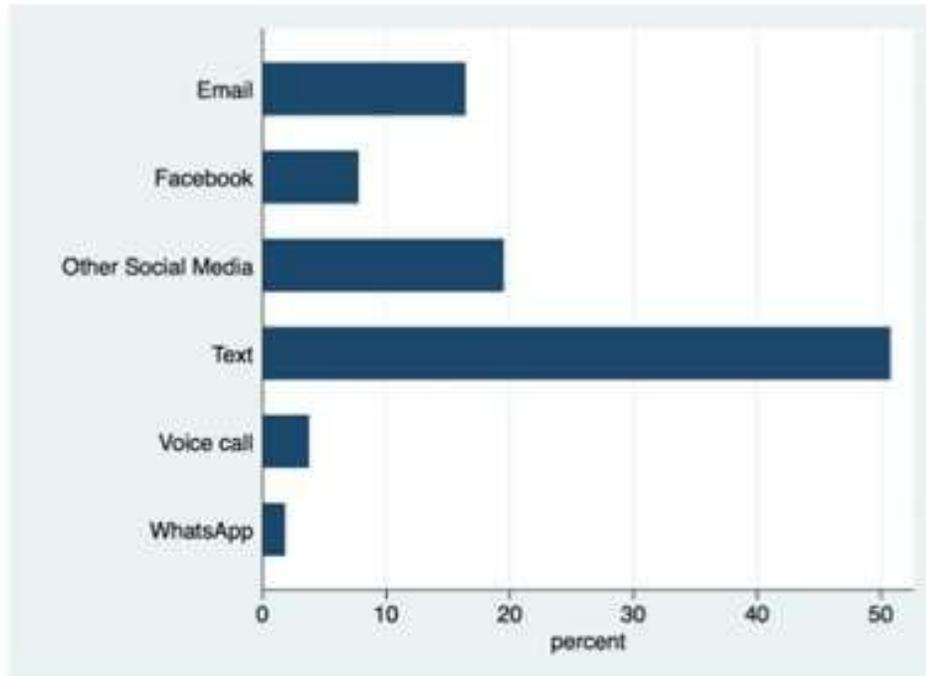
Child's Homework Device	Broadband	Free Wi-Fi	Mobile Phone	Total
	Full Sample			
Desktop	24.0	23.5	19.3	23.2
None	11.8	0.2	7.3	10.0
Purchased laptop	24.6	4.2	43.6	25.8
School laptop	12.9	70.3	4.8	16.9
Smartphone	8.6	1.7	10.0	8.2
Tablet w/ touch screen only	8.1	0.1	9.9	7.6
Tablet with external keyboard	10.0	0.1	5.1	8.3

Socially, children use mobile phones to interact with friends

Our research shows that in homes with internet access, 36% of children connect with their friends and social networks by using a smartphone. This finding makes sense given that the most common form of communication to interact with friends in the student demographic is “text” based communication. 50% of students reported interacting with their friends via text; followed by social media at 20%; and e-mail at 16%.

Interaction with Friends

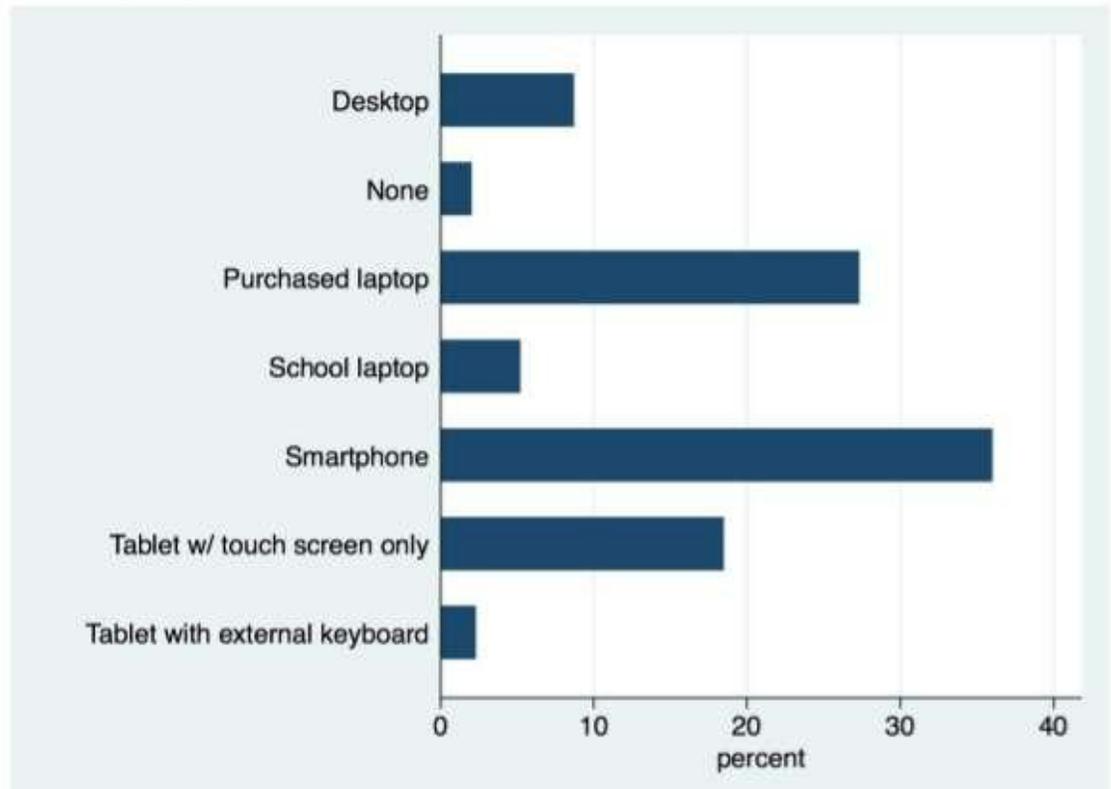
In homes with Internet access, most children interact with friends through texting or other social media.



[Table 20: Communication Interaction for Children in Homes Without Internet Access]

Device Use by Children

In homes with Internet access, 36% of children connect most often with smartphones. Laptop use is also common.



[Table 21: Device Use by Children in Homes with Internet Access]

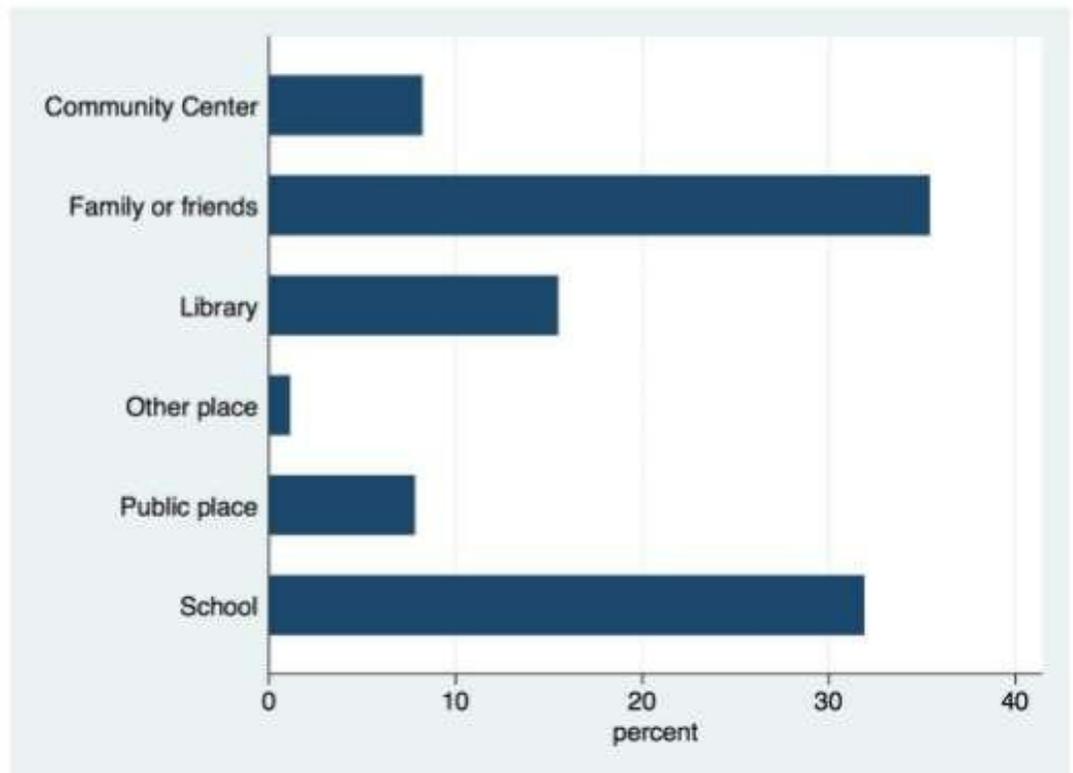
Homes without internet access

When it comes to homes without internet access, our research shows that children without internet access rely heavily on family and friends, schools, and libraries to access the internet. 35% of students without internet access at home reported family and friends were their means for accessing the internet. As it relates to schools, our focus groups highlighted that “lack of access to school devices all year-round” and a “less than 1:1 student to device ratio before grade 6” help explain why some students do not have a reliable way to get online. While more research should be done in this area, it is likely that these methods are unreliable points of connection as students are subject to the unpredictable nature of their family and friends’ schedules, proximity to libraries and schools as well as limited working hours. After family and friends, schools are the most common point of connection for 32% of students without a home connection. Cumulatively, roughly 23% of students without a home connection use a public facility – a library or a community center – to complete their homework when they need internet access. The usage of

public facilities by these students underscores a need for strong investment in public libraries and community centers to ensure these facilities are equipped with sufficient computers and reliable internet connections. Understandably, students were comparatively less likely to use a public place i.e. a coffee shop to access the internet for their homework. Public places are arguably a more reliable source of connection for adults than children. However, public computing facilities must also be seen as safe locations, especially for communities with a significant foreign born population.

Finding Access for Homework

Children who lack at-home Internet access largely rely on family, friends, and school when using the Internet for homework.



[Table 22: Homework Completion Alternatives for Children Without Internet]

What prevents seniors from accessing the internet?

The City of San José hosted multiple, professionally facilitated, focus groups with community stakeholders to identify what barriers exist for digitally excluded seniors and what interventions

would be most impactful. Mobility, technological difficulty, and online safety issues rose to the top for seniors.

Mobility highlighted as a primary barrier for seniors

A key barrier identified by these focus groups is mobility. Access to community centers, public libraries, trendy coffee shops and the sort are difficult for senior residents to reach. When given the choice between staying digitally disconnected and taking multiple buses to check e-mail at a public library, many residents in these communities are forced to choose the former. Focus group participants noted that seniors are often “unable to get out of the house for digital literacy opportunities. Numerous focus group participants proposed solutions like a “technology and internet on wheels” program or even an “Uber for seniors” partnership to solve mobility issues for seniors hoping to get connected. As cities and transit authorities plan routes in the future it is important to consider preserving routes that connect senior communities to public facilities in ways that are most direct. Overall, focus groups spoke to the need for cities to be thoughtful around transit paths to get seniors to facilities with internet and to find ways to connect those that are isolated and cannot access regular transit.

Seniors need digital literacy training that conforms with their language, culture, and level

The issue of mobility is compounded further with issues of digital literacy. Our focus groups identified that many low-income seniors report unfamiliarity with how to use computers and navigate the internet. Seniors struggle to understand how to use the actual equipment and require explanation as to what to press and when. For some, learning these new skills is met with strong inertia as it may feel too hard to learn something new. With training tailored to their needs, seniors can be brought into the digital fold and access the social value that stems from social connection that can combat loneliness, feel more empowered, and engage more fully with the world around them. Our focus groups identified a need for digital literacy programs; noting that we need to not only find “more volunteers to educate seniors,” but also find “culturally relevant instructors” and provide “IT support from a trusted source.” Participants found that “language barriers” create a need for “language appropriate outreach and education programs” to help the many residents who may not speak English at home be more comfortable undergoing digital literacy trainings. Additionally, these focus groups found that “one-on-one training” is important for the senior communities; understandably, focused attention is important in helping seniors penetrate the complexity that comes with learning new technology at an older age. Providing these trainings is a space that our focus groups believe would be ripe for corporate support. Participants cited that “getting companies involved in teaching youth to mentor seniors” or creating a “scholarship companion program” with youth training seniors or dedicated “financial support for training instructors” could help seniors become digitally literate. Programs like this could be executed at the secondary school level or spearheaded by a city’s Youth Commission. Students with volunteer requirements for graduation could choose to get their hours by teaching a senior how to navigate Facebook on an iPad.

Senior-focused technology can help accelerate technology use

Additionally, our focus groups called attention to seniors’ need for technology that is designed and meant for the older population. Participants noted that seniors want “highly simplified

devices”; “single button” options; “specific apps for seniors”; options for “large fonts” and more “audio” functionality. Understandably, seniors are dissuaded from wanting to learn how to use an iPad or navigate Facebook if they have to squint through small text, learn complex click paths, and filter through congested websites. San José must champion the user by helping seniors use apps and platforms meant for the older community.

Fears around scamming and online threats deter seniors from getting connected

Our focus groups identified that fears and anxieties around security, “scamming”, and online threats deters some seniors from going online. This speaks to the importance of teaching seniors not only what to do on the internet, but what not to do e.g. opening e-mails from unknown recipients, transferring money in unsecure ways, etc. When senior get scammed online their stories reverberate like an echo chamber – particularly in residential living centers for seniors – and discourage others. In Silicon Valley particularly, there is real room for social media companies like Facebook and Google to create toolkits around cybersecurity tailored towards senior citizens.

Creating a more social experience around digital literacy could fuel technology adoption

Focus groups also highlighted value around socializing seniors’ digital experience to promote digital learning. Participants cited possible solutions around the creation of “tech lounges” or weekly “tech clubs” in senior centers to incent collective digital learning via a social experience. When seniors can learn about the digital world together and informally they are able to learn through collaboration, shared experiences, and have access to nearby facilities that could have in-person professional support.

Overall, our focus groups have shown that while there are certainly several barriers in bridging the digital divide for the elderly, seniors want to get online. Citing motivation around “getting connected with their grandkids”, solving the digital divide for seniors has social importance and will add value to many residents in San José. To help address these issues and ensure San José stays cognizant of its digitally excluded seniors, participants in our focus groups cited a possible solution around creating a “digital seniors commission” in San José. Overall, our focus groups shed light on a number of barriers for seniors and potential solutions for how to bridge this digital divide.

Due to funding constraints, this report was unable to collect significant data-driven insights for those in the community that have disabilities in San José. We intend to make this a priority in upcoming digital inclusion work streams and update this report in the future.

What are the organizational and funding barriers to digital inclusion?

Historically, the City of San José had no clear owner inside City Hall to drive broadband leadership.⁴ This void creates a lack of coordination to implement a city-wide digital inclusion

⁴ The City recently hired a “Smart City Lead” in September 2017 to launch the broadband and digital inclusion strategy.

strategy. Presently, a wide range of actors in the public sector, private sectors, and community based organizations are working on their own to implement their programmatic visions. San José is fortunate to have this kind of engagement, but this approach creates isolated impact. When organizations work together, a streamlined approach that allocates philanthropic resources efficiently leads to big-picture transformation. With limited amounts of funding for digital inclusion programs, it is critical for organizations to band together to maximize impact. At a city-level, digital inclusion programs must compete with resource demand for more top-of-mind issues for our residents like: potholes, public safety, and affordable housing. It is impractical to expect a significant spike in budget allocations for digital inclusion programs. The City must find a creative and strategic approach to consolidating community and philanthropic resources to fund digital inclusion programs or make strategic tradeoffs to invest in digital inclusion to create an on-ramp to opportunity for low-income populations, learning for our youth, and social connections for our population of seniors and disabled.

ROADMAP AND NEXT STEPS:

Bridging the digital divide in San José will require an all-hands approach; city hall, public agencies, service providers, nonprofits, foundations, and academia will need to come together to implement necessary programmatic and policy interventions to bring the internet to every resident in San José by 2020.

How should we approach the implementation of our digital inclusion strategy?

The City of San José will adopt a “collective impact” approach to bridging the digital divide. Collective impact is a framework used to tackle deeply entrenched social problems. It is designed to promote collaboration across sectors and is premised on the idea that no single actor can solve complex problems alone. This approach will ensure that city-wide efforts across all actors are streamlined; there will be less competition over the same dollars; less redundancy of programs; and a more strategic look at the entire landscape to ensure all needs get met. To execute this, the City of San José must establish a central “collective impact organization” to spearhead the implementation of all digital inclusion efforts in San José – metaphorically serving as the City’s quarterback for digital inclusion. Without such a coordinated approach, a scattershot program to help individuals will not succeed in bridging the digital divide for all San José residents. In fact, divides will likely widen as our community becomes more digitally dependent. The City of San José is committed to building broadband and digital inclusion leadership inside City Hall beginning with a Smart City Lead to coordinate efforts across departments.

Who are the actors?

San José is fortunate to have a wide range of interested philanthropic communities looking to solve the digital divide. Our strategy has identified six primary actors: the City of San José, schools, nonprofits, industry (corporations and telecoms), foundations, and academia. For each actor, we have identified a list of actions they can take on to make progress towards any one of five categories: increasing access to devices, providing internet connection, increasing digital literacy, expanding the pipeline to jobs, and improving our broadband infrastructure.

Recommendations:

What does the City need to do?

- **Lower the cost barrier by encouraging competition in the market.** Specifically, taking a hybrid public-private approach to broadband to negotiate with broadband providers to invest in wireless and wireline infrastructure throughout San José. The negotiations should have a prioritized digital inclusion element to improve connectivity for underserved areas and explore ways to drive cost down for unconnected communities. According to San José's Broadband Strategy⁵ developed by Price Waterhouse Coopers, San José's current state of broadband lags behind peer cities. The market is dominated by two large players, which is typical of many large American cities. This duopoly means that market forces are not acting to significantly improve price, speed, and quality broadband services. The City should work with the private sector to ensure underserved areas get priority and that the quality of their broadband is consistent with key performance indicators.
- **Serve under-connected and low-income areas with affordable service** – San José is home to four key digitally excluded neighborhoods. Service providers should work with the City to prioritize the build out of broadband infrastructure to serve these communities. The City's broadband strategy report will speak to this in more detail, but asking broadband providers to build out these areas before going to more profitable areas, increasing incentives to build out these areas through lower fees, or, in some cases, considering municipal broadband are all potential interventions. In addition to engaging the private sector to provide an equitable build-out of broadband internet and lower the cost of quality home internet, the City may also pursue subsidizing home internet with a local digital inclusion fund and/or contributing to the state level programs.
- **Offer free public WiFi in more areas to reach vulnerable segments** – San José needs to have more free public WiFi in low-income areas to reach vulnerable populations. These networks should extend beyond just the downtown core. The City's Facebook "Terragraph" project and partnership with East Side Union High School District serve as potential models for this stream of action.
- **Better leverage of public facilities to improve free broadband access and use** – the City should continue to invest in its public libraries and community centers in addition to considering new public access computing facilities. Creating longer hours at our community

⁵ [Insert link to report]

centers and libraries will help students and those without broadband connections at home get online to complete school work or further their professional needs.

- **Invest in digital literacy programs for all segments** – the City should continue to invest in library and community center programs that promote “family digital training programs”. These programs give opportunities for parents and children to learn together and serve as an efficient mechanism for teaching digital literacy. Other programs like SJ Works and Work2Future also serve as important programs through which digital skills training should be pushed so those participants become eligible for technology oriented trades. The City has many programs that connect to digital literacy and education; it’s important for the City to streamline these type of digital literacy trainings. The City should invest in the creation of a “Chief Literacy Officer” to oversee all programs oriented towards digital skills education in San José.
- **Provide Leadership and Build Capacity** – digital inclusion is a complex problem requiring a multi-stakeholdered solution. The City should provide leadership and build capacity for a San José digital inclusion collective impact organization. This model has proven successful in cities like Austin, Kansas City, and Charlotte where the City Library has provided the initial leadership and capacity building for the collective impact organization.
- **Build Awareness** – A significant lack of awareness within the public and private sectors exists. The public discourse on size of the digital divide, the impact on quality of life, and the opportunities enabled by closing the digital divide needs to be elevated. Digital Inclusion events, Council designated Digital inclusion Days, and sponsorship of a national digital inclusion conference in San José are all appropriate and necessary recommendations modeled after other progressive cities.

What can service providers and corporate partners do?

- **Serve under-connected and low-income areas with affordable service** – San José is home to four key digitally excluded neighborhoods. Service providers should work with the City to prioritize the build out of broadband infrastructure to serve these communities in return for benefits that speed deployment efficiency in other areas of the city.
- **Lower pricing of high quality low-cost plans to \$5/month** in order to reach the majority of low-income families in San José.

- **Focus efforts on mobility** – survey results confirm that reasons of convenience, transience, and current mobile adoption drive a near term focus on using mobile service, hot-spots, and laptops as the best way to drive increasing adoption and inclusion.
- **Lower the device barrier with donation and refurbishment programs** – the Technology companies in Silicon Valley should leverage their vast supply of used devices and volunteer programs to refurbish laptops and donate them to a San José digital inclusion collective impact organization that can package the devices, access, and digital literacy. These devices may be donated and may also be part of a device check-out program to manage supply and demand until there is an abundance of devices for the digitally under-resourced.
- **Invest in programs that close the homework gap** – service providers can lead the way by donating devices and providing free internet plans for those in underserved areas. Sprint, for example, through their Sprint 1Million program, is donating nearly 10,000 devices and free internet plans for all four years to low-income high school students in San José.
- **Volunteer staff resources for digital literacy** – Technology companies in Silicon Valley are home to employees with vast technology knowledge. Companies can create volunteer programs internally that create pathways for their employees to teach digital skills to San José’s residents.
- **Use Technology to Promote Existing Services** – While sparse, some digital inclusion and literacy programs exist within San José but there is no central “locator” of services. The technology companies in Silicon Valley could easily develop a digital service to connect the digitally under resourced to the appropriate access, device, and literary services nearest to them.

How can academia help inform the City’s digital inclusion strategy?

- **Create evaluation metrics and key performance indicators** - Academic institutions can help the City create an evaluation framework and key performance indicators to determine what success metrics should look like for the array of programs to track progress against closing the digital divide and positive social outcomes (e.g., learning, economic).
- **Scope out problem area and build issues awareness** - Academic institutions can help the City understand the scope and size of various digital inclusion problems and build awareness around these issue areas e.g. survey the senior community in San José to develop a more granular data-driven understanding of what drives digital inclusion for seniors and what interventions would be most effective.

- **Financial modeling** Create analysis that explores creative business and financing models for the low-income community that can inform how philanthropic institutions, governments, and corporations can intervene in this space.

With the shift to hybrid learning models, what can schools do to help bridge the digital divide?

- **Messaging the importance of broadband for education to parents and families** – Schools should invest in programs that communicate to parents that at home internet connections are needed to complete homework, communicate with teachers, obtain information about school events, and other activities meant to advance learning. This will help change perceptions on why the internet matters and increase its value to the low-income community.
- **Shift Focus to Early Years** – The majority of current school efforts focus on access, device, and literacy in high school. However, this is when parents are least engaged with their children. One focus group revelation was that the least amount of effort promoting digital inclusion in schools occurs when the parents are most engaged. A more balanced solution would be to focus on digital inclusion efforts in Grades 3-5 when the parents, the financial decision makers, are most engaged with their children. Schools should strive for 1:1 school provided home laptops starting in grade 3 with associated support for home access and digital literacy for all members in the family.
- **Invest in digital resources for students** - School districts should invest in purchasing devices and data plans for their students and passing system wide plans that include digital inclusion goals. If schools are going to move towards hybrid learning models, more investment should be made in ensuring their students are connected.
- **Educate families about cyberbullying, security and online threats** - School districts should create and disseminate a privacy and cybersecurity toolkit for students and parents to help mitigate fears around online threats. Doing this will help reduce the inertia around getting connected and protect families once they do sign up.
- **Educate and Enable Teachers** - Focus groups and interviews cited a need to provide teachers more education and tools to make them more efficient and effective in educating school children. While existing programs such as School2Home have proven successful at increasing inclusion within pilot middle schools, it was also noted that these programs are extremely burdensome to the schools and teachers to administer. Also most of these programs require the families to pay for access and devices at home.

What kind of programming should nonprofits focus on to bridge the digital divide?

- **Invest in digital inclusion programs** - Non-profits can lead programs that work towards funding the refurbishment of devices, providing IT support for students and new users, serve as centers for device dissemination, create partnership programs like “internet on wheels” and other mobility solutions for the senior and disabled communities, and promote digital literacy trainings.
- **Help identify participants for programs** - Non-profits can also help screen applicants for digital inclusion programs i.e. help cities and schools identify residents that are in need of programmatic support.
- **Provide financial guarantees** – Given that some residents who are digitally excluded do not have the banking collateral (debit, credit cards, credit history, etc.) or are unwilling to give their account information, nonprofits can provide financial guarantees on behalf of those who lack a credit card, debit card, or have a history of missed payments.
- **Tailor digital literacy programs by segment** – the needs of different segments of the digitally excluded require different approaches. For example, seniors may need a different digital interface to learn than children (e.g., larger font). Training in multiple languages is also critical. Also, family digital literacy programs can address fears by parents and get children on-line safely at the same time.

Where should foundations invest their resources to maximize impact around digital inclusion?

- **Incentivize the actions of nonprofits, government, and corporations to address the issues on a systemic level.** Too many one-off, uncoordinated programs around digital literacy, coding, or other digital skills exist today. Taking a systemic approach to addressing the digital divide will be more effective in the long term.
- **Invest in basic connectivity and devices** – many low-income adults and children, elderly, and disabled people lack adequate broadband connectivity. Although many programs exist to teach children digital skills like coding, few address basic connectivity challenges that are foundational to teach digital literacy in the long term. To really build digital skills, consistent access to the internet and devices at home is essential. And, there is a certain segment of the population that simply cannot afford these services.
- **Tailor digital literacy programs by segment** – the needs of different segments of the digitally excluded require different approaches. For example, seniors may need a different digital interface to learn than children (e.g., larger font). Training in multiple languages is also

critical. Also, family digital literacy programs can address fears by parents and get children on-line safely at the same time.

- **Fund evidence-based research to inform digital inclusion programs--** Research like this report can provide an evidence-based perspective on how digitally excluded populations access and use the internet. Without such baseline data, programs may not actually address the concerns of target populations.
- **Invest resources in digital inclusion programs** – Foundations could invest resources in programs that: provide devices and connections to the low-income community, create more digital literacy trainings, create new broadband infrastructure for underserved areas.

Potential next steps for the collective impact organization:

- Establish a collective impact organization to oversee digital inclusion efforts
- Develop private sector partnerships for a device refurbishment program
- Pilot a device checkout program within the City library system
- Invest in programs and a communications strategy that educates parents on the importance of connectivity for school success.
- Create a privacy and security toolkit for students and parents to mitigate fear concerns about being connected.
- Screen applicants to identify who should receive subsidized or donated devices
- Deploy high tech volunteer programs to expand digital literacy trainings to residents
- Create family digital learning centers at libraries and community based organizations
- Expand the number of computers in community centers.
- Establish a Chief Literacy Officer to oversee digital literacy programs in San José
- Engage youth to expand senior digital literacy programs
- Create “internet and technology on wheels” type programs to provide support for non-mobile seniors
- Create age, language, culturally relevant programming for seniors.
- Recruit hardware and software companies to pilot devices, operating systems, and applications relevant to seniors
- Leverage nonprofits and corporate partners to provide financial guarantees on behalf of those who lack a credit card, debit card, or have a history of missed payments.
- Create an evaluation framework / KPIs to determine success metrics for our programs, help the City understand the size of the problem and build awareness over these issue areas, and create analysis that explores various creative ways for financing devices in the low-income community.
- Deploy a high-quality free public WiFi network in the downtown core and underserved areas.

- Facilitate negotiations with carriers and service providers to improve connectivity for underserved areas and explore ways to drive cost down for unconnected communities.
- Negotiate incentives with service providers (bulk purchases, tax breaks) and administer sign-up process locally
- Invest in creating longer hours at our community centers and libraries so the public can access the Internet via public computing options.
- Have school districts invest in purchasing devices for their students and passing plans that create digital inclusion goals.

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