

Achieving Digital Inclusion:
An Urban-Global Comparison of Digital Divide Programs in Chile and Hartford

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Our dependency on technology is unavoidable. The digitalization of information and communication has spurred unprecedented collaboration and innovation in the past two decades, and there is no sign of this progress slowing. As consumers and users, we keep our eyes forward, awaiting faster communication and more dynamic and accessible technologies. As participants in globalization, we expect greater international communication and global integration. However, it is crucial to look at the bottom line in this development - what are the consequences of being outside this trend? The more vulnerable portions of our society lack the educational and economic resources to bridge this digital divide and subsequently face heightened isolation and marginalization. The vast quantity of free information and communication technology available online presents an opportunity for unprecedented social democratization, but first access must be achieved. How has this access been facilitated?

From my personal experiences in South America and here in the South End, I have found two unlikely companions in this process of digital inclusion. In Chile, I saw Biblioredes, a government initiative, spread computer access across the country. In Hartford, I have seen a variety of government and neighborhood organizations take on the same task. What drew me to this comparison is the perceived incompatibility of these two projects; how can one adequately compare a government-sponsored national initiative to a multi-faceted regional one? The task has involved finding clear differences in each subject's approach to expanding computer access and Internet use for a population that faces digital exclusion. In trying to bring the global lessons to the local setting, what pieces of the Chile project

should Hartford, specifically in the South End, learn from in their attempts to better serve the community? I believe the efforts by local institutions would greatly benefit from consolidation through collaboration, as seen in the more unified Chilean system.

Chile and Hartford: Two Digital Landscapes

My original reflection on Chile's digital development highlighted a few key characteristics of the country's computer status. In 2006, 60% of the richest ten percent of Chile owned a computer and 47% had access to Internet in the home. In comparison, only 4% of the lowest ten percent of Chileans owned a computer and 1.5% had Internet access in the home.¹ Households that earned more than \$600,000 Chilean pesos (1100 dollars) a month in 2003 had a level of computer competence seven times higher than the households who earned less than \$90,000 Chilean pesos (165 dollars).² One can see that Chilean society is highly segregated in their access and understanding of computer and Internet use.

Using the 2004 data from the AETNA Center for Families & Kellogg Project Community Resident Survey, one can find troubling data in Hartford as well. The numbers are not as drastic in Chile but still note-worthy. The Kellogg data was not constrained by economic variables, but 37% of the households surveyed owned a computer. When asked where they use the computer, only 27% said they used a computer at home. Furthermore, residents with Internet access and email made up 22% and 20% of the respondents respectively. While 48% of residents said they felt

¹ CASEN, "Serie análisis de resultados de la encuesta de caracterización socioeconómica nacional", Mideplan.cl, 2006.

² Mella, Orlando. "Impact Evaluation of Biblioredes: Abre tu Mundo Project", Alberto Hurtado University-CIDE, 2003.

very comfortable using a computer, 78% said they needed more computer training. In frequency of computer use, unemployed residents were also less familiar with computer use: 33% use the computer everyday compared to 54% of employed, and 63% had never used a computer. 66% of the residents surveyed were unemployed, magnifying this disparity.³ This data shows that frequent computer use is not standard in this portion of the South End. To better understand this data, one must remember that Frog Hollow is a transient neighborhood; the mean years of residence is five years, implying high mobility.⁴ The neighborhood, described as a “landing pad” for Hispanic immigrants, has not only high levels of urban poverty, but also a complex population of recent immigrants with uncertain economic futures.⁵

Comparing these two data sets does not create a concise understanding because of the different contexts; a developing Latin American country and an immigrant neighborhood in the United States are dissimilar on too many levels. However, Hartford City Hall states that Internet access in the suburbs is over 70%.⁶ Biblioredes notes that Chile, in comparison to developed countries, is still far behind in digitalization.⁷ Both these environments can be described as being on the wrong side of the digital divide. Subsequently, it is important to see what steps have been taken in each setting to address this problem.

³ James Hughes. “Kellogg Project and Aetna Center for Family Community Resident Survey” Hartford, CT. 2005. 12.

⁴ Hughes, 5.

⁵ Carlos Espinosa, interview by author, Hartford CT, October 26, 2009.

⁶ Eddie Perez. “State of the City 2006” *Hartford City Hall* www.hartfordinfo.org/issues/wsd/government/stateofcity06.pdf (accessed November 2, 2009)

⁷ Mella, Orlando. “Impact Evaluation of Biblioredes: Abre tu Mundo Project”, Alberto Hurtado University-CIDE, 2003.

Biblioredes: A National Project

Biblioredes, a project under the Board of Public Libraries in Chile with funding from the Bill & Melinda Gates Foundation, was a government initiative to spur national digital development. The government acknowledged a growing digital divide in Chile in 2000 and focused on creating a long-term solution. In their “Digital Agenda”, the Chilean government created an institution to offer broadband access in public areas, lower Internet service costs, and create a campaign for teaching basic computer literacy. Biblioredes was the result. Its mission is to “help people become active agents in the cultural and social development of their neighborhood, and surpass the barriers of isolation through the use of new information and communication technologies.”⁸ To achieve this goal, Biblioredes has installed thousands of computers and has continually offered free Internet access for all computer users in the thousands of libraries across the country. Using these computers, libraries are able to offer “training in the use of digital communication and information technology,” “publication of local content on the Internet,” and “remote communication with other communities (video conferences, chat room discussions, e-mail and other means of communication.)”⁹ Since its inception, Biblioredes has continually self evaluated its progress, focusing on their commitment to both raising the national level of digital competence, but also the intended result of raised social capital in the country. Its impact on the country is

⁸ “Sobre Biblioredes,” *Biblioredes Portal*.
<http://www.biblioredes.cl/bibliored/> (accessed October 10, 2009).

⁹ Marcela Román. “Impact Evaluation of Biblioredes: Abres tu Mundo”
<http://www.biblioredes.cl/BiblioRed/BiblioRedes/Estudio+de+Impacto/> (accessed October 15, 2009).

noticeable: 85% of the municipalities in the country are part of Biblioredes's network, with 100% expected in 2010.¹⁰ This network is crucial; for one in three municipalities, "the public library is the only place for free communal access to the Internet."¹¹ By 2007, Biblioredes reached their intended goal set by the government's Digital Access Campaign, and have begun to shift their focus from physical offerings in libraries to an online digital community based on social networking.

Hartford City Hall: Generating Accessibility

Five years after Chilean President Ricardo Lagos discussed the importance of national digital inclusion, Hartford Mayor Eddie Perez addressed the same topic in his 2006 State of the City address. Perez's focus on the digital divide was first referenced as an economic concern. Hartford's employment opportunities, such as "finance and insurance" as well as "the fields of medicine, government, the arts, and education" demand "advanced computer skills."¹² The solution focused on the creation of two wireless zones, subsidized computers for residents, and introductory computer courses. This expanded access would allow Hartford citizens to "click and connect to the information superhighway from anywhere in their neighborhood" and subsequently improve their chances at better employment and more education.¹³

¹⁰ Sobre Biblioredes," *Biblioredes Portal*.
<http://www.biblioredes.cl/bibliored/> (accessed October 10, 2009).

¹¹ Education Research and Development Center. "Biblioredes: Intermediate Evaluation Form, 2004" <http://www.biblioredes.cl/BiblioRed/BiblioRedes/Estudio+de+Impacto/> (accessed October 15, 2009).

¹² Perez, 2006.

¹³ Perez, 2006.

The “Wireless Hartford” plan began in October 2006. Using the money from the sale of the Hartford Convention Center, City Hall implemented a multifaceted campaign, including the creation of a “Wireless Hartford,” subsidized computers for Hartford residents, and technical classes for new computer owners. The wireless project began with two beta zones in the Blue Hills and downtown area. 66 access points in Blue Hills and 52 in downtown were installed to telephone and street light poles.¹⁴ There is unlimited access, though there are reports to start charging for over 20 hours a week. The original goal was to use the funds collected by the wireless access fees to expand the project into other neighborhoods. Households in Blue Hills and Downtown were able to purchase one of 900 computers for \$150 after showing proof of residence in the two neighborhoods. Upon receiving the computers, the residents then registered for an introductory class through the Hartford Public Library.¹⁵ The class and payment served as an investment to ensure the participation of active residents that would benefit more from the service.

The implementation of City Hall’s project faced multiple problems from the beginning. Most noticeably, the Blue Hills zone has struggled with to the nature of the neighborhood. As its name implies, Blue Hills is set on unequal terrain, upsetting the reach of certain access points. Another factor disrupting Wi-Fi service is the tree density in the area; the neighborhood is covered in older, thick deciduous trees that also weaken the strength of the wireless signal. Blue Hills has historically been a residential neighborhood with brick houses, which create another Wi-Fi barrier. The

¹⁴ Stephen Shipman, interview with the author, Hartford CT, November 13, 2009.

¹⁵ Shipman, 2009.

subsidized computer project sold all 900 units but has been unable to do additional levels of distribution, making the impact limited.

Implementation in the downtown area has been more successful due to the landscape of the neighborhood. First, the terrain is more condensed and flatter than downtown, with more overlap between servers and less dead space. The buildings in the downtown area are built of materials that better permit the penetration of Wi-Fi signals. Lastly, there's greater demand for the wireless zone because of the nature of the inhabitants; office workers (and subsequently commuters) have a greater use for online connection throughout the day.¹⁶

Overall, the entire project's impact is limited by these physical realities and economic sustainability. Maintaining the two Wi-Fi zones has proven to be more expensive than originally expected, preventing the intended spread into other neighborhoods in the city. Furthermore, from an economic standpoint, the limited gains of the Blue Hills zone are not a persuasive argument for expanding the project into the South End, especially given current economic realities. Instead, the city is moving in a new direction. The Metro Hartford Information Services (HITS) office has applied for a six million dollar Broadband Technology Opportunities Program (BTOP) grant, part of President Obama's 2009 American Recovery and Reinvestment Act. With the BTOP grant, a series of broadband paths would branch out through the city, creating access points at police stations, fire stations, and seventy-eight community based organizations. The organizations would include public housing, homeless shelters, recreation, youth and senior centers, after-school

¹⁶ Shipman, 2009.

programs, and health education centers.¹⁷ These broadband centers will install Wi-Fi access points to create a citywide distribution of smaller wireless hubs. The intended result is a more targeted approach to the digital divide that emphasizes locations that are well known and accessible to the community. Schools and libraries are not included in this network because these institutions already receive heavily subsidized computers and high-speed Internet service.

City Halls' actions to combat the digital divide reflect the level of attention in the Chilean government. Ensuring broader connectivity demands increasing accessibility, and plans such as a wireless zone or broadband network seem like logical solutions to this problem. However, the element of education and the transfer of the concept of digital access was utilized to a certain extent in the Wireless Hartford campaign, and dropped in the BTOP proposal. Both programs attempt to reach out to the excluded population, but there is no attempt to better educate non-computer users beyond the 900 households with subsidized computers. The strategy evokes a "If you build it, they will come" mentality that assumes residents without experience will find ways to gain confidence with the computer and use the technology effectively. Looking beyond City Hall to the library and community organizations in the South End, it is important to understand the specific goals and unique challenges of creating alternative plans for closing the digital divide.

The Hartford Public Library – Main Branch

¹⁷ Metro Hartford Information Services, "BTOP Application Executive Summary" www.ct.gov/recovery/lib/recovery/certification/.../doit_btop_appilcation.pdf (accessed November 28, 2009).

The Hartford Public Library (HPL) has been crucial in developing a consistent schedule of computer literacy classes. The main branch's computer classrooms have 25 computers with a projector for the teacher. The average class size is around fifteen students. Classes are two hours long and vary from a single session to a month long curriculum. The branch offers between three and four different classes a week, with a special focus on Spanish computer users on Tuesdays. The meeting times are also spread throughout the day to fit different schedules. HPL has consistently offered introductory computer classes, but uses the summer to develop new and creative curriculums developed by student volunteers. The classes are completely free; registration involves giving one's name and phone number online, over the phone, or in person. Funding for the computers and teachers has come from a variety of sources, including the Hartford Foundation for Public Giving, SBC Internet, Citibank, and most recently The Bill and Melinda Gates Foundation. From October 2008 to September 2009, the library has taught 4,073 students.¹⁸

Using the November-December course schedule, one can get a sense of the offerings at the library. Of the 26 classes being offered, eight are introductory classes, eight are one-session classes on Microsoft Publisher, seven are advanced Microsoft Office courses, and three are web-based courses.¹⁹ Seventeen of the

¹⁸ Kellie O'Donnell, interview with author, Hartford CT, October 30, 2009.

¹⁹ Class titles descriptions - Introductory classes: *Microsoft Office 2007 Sampler (English and Spanish)*, *Learn to Type*, *Computer Basics*, and *Excel 2007 Basics* Publisher classes: *Greeting Cards (English and Spanish)*, *Brochures*, and *Business Cards (English and Spanish)* Microsoft Office classes: *Excel Charts*, *Word Columns, Tables and Tabs*, *Word Mail Merge*, and *Word Envelopes and Labels*, Web-based Classes: *My Yahoo!* and *Photo Sharing Online*.

classes are offered in the evening, six are offered in the afternoon and one Type to Learn course is offered in the morning. The heavy emphasis on Microsoft Publisher is due to one current teacher's interest in the program and its potential use in the holiday season.²⁰

In the current course selection's broad range of classes offered at the library, one sees a response to the demand for classes in Spanish. Budget issues and the availability of bilingual teachers has been an issue for the library's program. Of the classes taught in Spanish, three are Microsoft Publisher, one is the Microsoft Office Sampler, and two classes are open lab times where one can approach the teacher with a particular question. These open labs are unique to the Spanish classes. There is currently one Spanish class a week taught at the main branch from 6 to 8 PM. Additional services to the Spanish community include weekly classes on Park Street, a once a month class taught at the Dwight branch library, and a different curriculum for ESL classes.

The Hartford Public Library – Park Street Branch

To better understand the impact of the library's efforts to improve computer literacy in the South End, one must look at the efforts at the nearby Park Street Branch Library. At this small storefront library, the weekly classes are exclusively focused on servicing the extensive Spanish community. The library, currently undergoing renovations, has four computers and offers classes every Wednesday at noon. These classes are half an hour longer than the ones offered at the Main Branch, and focus exclusively on introductory computer skills. The typical class size

²⁰ Hartford Public Library "Computer Classes" Library flier, 2009.

is between seven and eight students; students often rotate turns using the four computers throughout the class. Classes began in August 2009 but were not consistently offered due to lack of instructors from the Main Branch. Many of the students at the Park Street Branch are older and also attend the Tuesday evening classes offered downtown. When classes are not being offered, library patrons are consistently using the computers; adults are the primary users from 10 AM to 3:30 PM, when children from Maria Sanchez Public School use the computers until the library closes. When asked what the most frequent requests are, branch librarian Leticia Cotto said simple tasks such as email, online job applications, and GED practice were most common.²¹ While this branch is focused on servicing the community, the space curtails a more thorough effort to raise the neighborhood's level of computer literacy. Looking beyond the library, three community-based organizations have taken different approaches to this same task.

Trinfo Café – The Personal Approach

While I will not go into great detail about the history and programming of Trinfo Café, I believe it is important to put the organization in a broader context. Trinfo's goal of addressing the digital divide in Hartford originally consisted of a three-part approach: helping development digital competence for organizations in the greater neighborhood, offering the necessary hardware, and creating an open computer center for the community. While the open computer center is the most tangible portion, Trinfo played an important role in helping 125 organizations develop a digital infrastructure with email and web pages that is necessary for their

²¹ Leticia Cotto, interview with author, Hartford CT, November 16, 2009.

projects. While this infrastructural support has continued for some of these organizations, many have matured and demand more advanced support. Meanwhile, Trinfo's focus has shifted primarily to developing greater digital literacy in the community through the classes offered in the center and the distribution of refurbished computers.

Classes taught at Trinfo reflect the community it serves. While the classes were originally taught in a classroom format, they are now personal sessions with one or two students per teacher. They offer basic computer and Internet use, as well as two levels of Microsoft Word, Excel, and PowerPoint, a selection not as developed as the library but with more options than Park Street. Classes are set up around a schedule set by the instructor and the student. Since its inception, Trinfo has taught over 2500 residents.

Beyond the classes, Trinfo serves as a community center for the community. Over 6500 residents have set up Trinfo accounts and the center has a consistent rotation of regular users. Much like the Park Street Branch Library, Trinfo experiences an influx of students in the late afternoon, and created Kids Hours in response. The idea is to create a safe haven for kids when their parents may still be at work. Trinfo has also worked with schools to create a multimedia afterschool program, though the programs have struggled with sporadic attendance. Lastly, Trinfo offers a biannual computer-recycling program, which has distributed over 800 computers to residents in the South End.²²

Billings Forge – From Classes to Labs

²² Espinosa, 2009.

The computer lab at Billings Forge is one piece of a larger community-based organization. The center began offering computer classes five years ago in the evenings, but has recently switched to the open lab model. The classes focused on basic computer literacy, with an introduction to Windows, the Microsoft Office suite, and introductory Internet use. The community expressed interest in the computer lab, but preferred the opportunity to ask specific questions to the class schedule. Billings Forge adjusted and switched from structured classes to not isolate those who wanted to use the lab for other uses. For adults, the computer lab was open during Tuesday nights, but has switched to Saturday mornings because of the instructor's schedule. The open lab periods have become an opportunity to get help on formatting a resume, looking for a job online, or basic navigational questions.²³ Billings Forge has extended their lab hours to the late afternoon, creating another space for students in the neighborhood; while the lab is open for all users from 3 to 5 PM, there is a tutoring program that uses the lab from 5:15 to 6 to help kids do their homework.²⁴ For both lab sessions, the instructors are bilingual.

Mi Casa – Specified Use

Mi Casa has been an integral organization for Hartford's Hispanic community and they have utilized their computer lab to further their impact. Unlike the other organizations that offer open lab periods and computer classes, Mi Casa uses their 16-computer lab for specific tasks. Students are allowed to use the space with supervision for their homework and tutoring during their after-school program. Clients with Mi Casa's Walk-In Services use the lab with the staff to look for housing

²³ Ricardo Mardales, phone interview with author, November 30, 2009.

²⁴ José Santiago, interview with author, Hartford CT, November 18, 2009.

and employment opportunities online, and create a resume. Mi Casa is currently trying to update the lab to help their ESL courses, and have no plans to create curriculums around computer use.²⁵

Implications

In developing this picture of how Hartford, especially the Latino community, has adapted to these efforts at digital inclusion, I believe the efforts are sincere but disjointed. City Hall's efforts are creating a network, either wireless or broadband, that is limited in reach but free. The non-government institutions in return have created an eclectic spectrum for all types of users; one can get personal or classroom settings, basic or advanced topics, or purely free access to a computer and the Internet. All these community labs recognize the importance of educating the children in the neighborhood, or at least offering them a place where their parents know they are safe. And all of these institutions recognize the importance of computer access and have subsequently put forward the time and effort to raise capital and apply for grants to better service this need in the community.

The interest in the community is there. Thousands of Hartford residents use these institutions to enter the digital community, and I was able to discuss this access with a few students at Trinfo Café and workers at Billings Forge and the library. I spoke to adult students, all of whom had some apprehension with the computer but were excited by the possibilities. Some were excited by the prospect of easier communication with relatives in other countries. Others hope to use

²⁵ Elsie de León, interview with author, Hartford CT, December 1, 2009.

computers to find employment or generate the skill set necessary.²⁶ The relationship is confusing; users' misconceptions of the Internet lead to both irrational fears and high expectations.

Conclusion

In comparison to the Chilean project, Hartford City Hall's decision to be most importantly a provider of Internet access is a less dynamic approach to seriously tackling the digital divide. The government sponsored program in Chile places emphasis on targeted locations with developed curriculums for bridging the digital divide in a thorough manner. That is to say, the government's interest is not only how many connect online, but also for what purpose. Hartford's government approach has been more focused on creating means of connectivity, then placing the burden of education on the public library and non-profit organizations. As City Hall's efforts to create coverage face challenges and these institutions face their own financial or staff issues, computer education falls behind the promise of offering free computer and Internet access. Given the nature of the Internet, this trend could be more negative than no access at all. Those who have no experience with the Internet will be too intimidated to bridge the gap. José Santiago at Billings Forge lamented that the kids who used the open lab were almost entirely on Facebook, Youtube, and online game site; these distractions could hurt these student's academics overall. For adults, email scams, phishing, and identity theft seriously endanger those who are already economically vulnerable. Recognizing these dangers demands a broad understanding of the Internet. If City Hall is serious about taking on the larger issues

²⁶ Various students, interviews conducted by author, October and November, 2009.

of the digital divide, providing access is only one step of the problem. Moving forward, these institutions must be more aware of each other's offerings and struggles to better assist the development of real digital inclusion. Information and communication technologies are hurdling forward every day, and basic computer skills are only the first step in the closing of the digital divide. In Chile, there is a case for creating an institutional structure for this problem, in Hartford the complex process of introducing new users, cultivating more advanced ones and ensuring access to all cannot be successfully implemented without serious communication and collaboration in the community.

Work Cited

Education Research and Development Center. "Biblioredes: Intermediate Evaluation Form, 2004" <http://www.biblioredes.cl/BiblioRed/BiblioRedes/Estudio+de+Impacto/> (accessed October 15, 2009).

- Hartford Public Library "Computer Classes" Library flier, 2009.
- Hughes, James . "Kellogg Project and Aetna Center for Family Community Resident Survey" (Hartford, CT: Trinity College, 2005).
- Marcela Román. "Impact Evaluation of Biblioredes: Abres tu Mundo"
<http://www.biblioredes.cl/BiblioRed/BiblioRedes/Estudio+de+Impacto/>
(accessed October 15, 2009).
- Mella, Orlando. "Impact Evaluation of Biblioredes: Abre tu Mundo Project", Alberto Hurtado University-CIDE, 2003.
- Metro Hartford Information Services, "BTOP Application Executive Summary"
www.ct.gov/recovery/lib/recovery/certification/.../doit_btop_appilcation.pdf (accessed November 28, 2009).
- Perez, Eddie. "State of the City 2006" *Hartford City Hall*
www.hartfordinfo.org/issues/wsd/government/stateofcity06.pdf (accessed November 2, 2009)
- Sobre Biblioredes," *Biblioredes Portal*. <http://www.biblioredes.cl/bibliored/>
(accessed October 10, 2009).