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December 2002

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THE CHALLENGES OF REDRESSING THE DIGITAL DIVIDE: A TALE OF TWO CITIES

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Abstract

This paper presents a study that was designed to examine efforts undertaken by two cities—Atlanta and LaGrange, Georgia—to redress the digital divide. Atlanta's initiative has taken the form of community technology centers where citizens can come to get exposure to information technology and to learn something about computers and their applications. LaGrange has taken a very different approach, providing free Internet access to the home via a digital cable set-top box. This research is designed to examine the strengths and limitations of the two initiatives, with the goal of understanding why neither effort has had the impact that policy makers had hoped for with respect to solving the digital divide problem. Our findings indicate that the relationship between access and use of IT is not deterministic. Social processes that exist at both the institutional and individual levels of analysis complicate this relationship. From the institutional perspective, a persistent divide exists even when cities are giving away a theoretically "free good" or service. Free goods often took the form of a training course that delivered little more than basic IT literacy and computer hardware of inferior quality and capabilities. From the individual perspective, we found that economic capital explains gaps in physical access to IT, but social capital and cultural capital explain gaps in the ability to use IT as well as disparities in the benefits that one derives from IT use. Therefore, as IT access continues to proliferate to nontraditional communities of users, sustainability of these digital divide initiatives should not continue to be measured in purely economic and technological terms. We must also consider the sustainability of the innovative elements: the participants.

1 INTRODUCTION

The digital divide—the gap between those sections of the population with and those without access to information technology (IT)—is a highly debated social issue (Norris 2001). In addition to being a topic of interest for academic researchers, the digital divide is a matter of considerable concern for business leaders and government officials throughout the world. It is a subject of discussion in all levels of government, in corporate boardrooms, in educational institutions, and in grassroots organizations.

Most of our knowledge about the digital divide in the United States is based on survey research on home computer ownership and Internet access. These studies have found that the divide is most related to ethnic and minority group affiliation, geographic location, household composition, age, education, and income level (Hoffman and Novak 1998; Katz and Aspden 1997; NTIA 1998, 1999, 2000, 2002). Citing these survey results, most of the initiatives to bridge the divide focus on providing access to IT such as computing resources, Internet access, and training to nontraditional users.

Digital divide research and policy assumes that people can convert IT access into other valued goods, services, and life outcomes. However, little research has been conducted to actually test this premise for IT access and use by nontraditional users (DiMaggio et al. 2001). To begin exploring this premise, this research is designed to understand and evaluate the strengths and limitations of very different approaches that have been taken to address the digital divide. We employ a comparative case study approach

for two reasons. First, the researchers were provided a unique opportunity to evaluate two municipalities early in the implementation of their digital divide initiatives. As a consequence, the researchers are in a position to produce revelatory findings and recommendations. Second, two replications are used to provide a more robust and compelling investigation of the digital divide, a social phenomenon that some researchers argue is conceptually oversimplified and theoretically underdeveloped (Ba et al. 2001; Selwyn 2002). Therefore, these real-life interventions were deemed by the researchers to be too complex for survey or experimental strategies. Intensive research methods were employed to gain rich insights into the complex social processes that shape and are shaped by the digital divide.

This paper begins by presenting Bourdieu's theory of practice. This theoretical framework enables us to consider not only the IT artifact, but also individual and societal influences that contribute to the structuring of IT access and use. Thus we can begin to understand the extent to which underrepresented groups are benefiting from the increased access to IT provided by these two digital divide initiatives. Having established a more sociologically informed and complex model, the paper presents case materials and findings that answer the following research questions:

1. *How have the target population and service providers reacted to the two initiatives?*

2. *Why have these initiatives been less successful than expected?*

2   THEORETICAL FRAMEWORK

This research is informed by Bourdieu's (1980, 1984; Bourdieu and Waquant 1992) theory of practice, which gives primary attention to the roles that educational opportunity, economic power, inequalities in access to material resources and labor markets, and other social structures play in explaining differences in the rates of return derived from IT use. For Bourdieu, a central concern is *practice,* the dialectic relationship between how social actors construct social reality and how structure constrains or enables them. The concept of a *field,* together with the notions of *habitus* and *capital* form the central organizing concepts of Bourdieu's work (see Table 1).

Table 1. Bourdieu's Theoretical Concepts

Theoretical Concept	Definition	Field-Based Example
Habitus	An internalized strategy-generating framework that bounds thoughts, perceptions, expressions and actions; choices are bounded by opportunities and constraints that make some possibilities inconceivable, others improbable and a limited range acceptable.	"I will learn a lot of computer applications when I finish this class. I will be able to get…better opportunities. I will bridge the digital divide."
Field	A structured social space in which struggles over the resources, systems of meaning and value of information technology take place. Each field has its own rules and its own relations of power.	Atlanta's community technology initiative and LaGrange's Freenet initiative
Cultural capital	The accumulated stock of knowledge about prestigious forms of cultural expression such as information technology, which is learned through educational training.	"As a student I have learned more about the computer than I have ever dreamed. This training that I have received has helped in my business and in my church."
Social capital	The benefits that one can potentially receive from participating in communities and networks. These benefits come in the form of information, support, guidance, or additional social contacts.	"It has become the responsibility of those who have the ability to train others with computer skills to do so in a comfortable setting."
Economic capital	Monetary means such as property, stocks and money that can be employed as power resources in actor's struggles for social mobility within a field.	"There is definitely a digital divide… because many people cannot afford to obtain their own PC."

The habitus represents human agency, but it also predisposes actors toward certain ways of behaving that are expected of "people like us." It is a "feel for the game" or a "practical sense" that guides the actions and reactions of actors in a manner that is not calculated or rule based. Rather, it is a set of dispositions that are learned over one's life history which generate perceptions and guide practices. As Bourdieu states "The habitus—embodied history, internalized as a second nature and so forgotten as history—is the active presence of the whole past of which it is the product" (Bourdieu and Wacquant 1992, p. 56). Collective histories help to account for the similarity in the habitus of actors that occupy similar social positions. Thus a habitus is applicable to both individuals and social groups. Moreover, the habitus of different social groupings are, for Bourdieu (1980, 1984), marked unequally and hierarchically.

All practices are seen as the product of the relation between the habitus and specific social contexts known as fields. A field is a site of intense struggles between competing stakeholders. Power relations and social structures within a field constrain and enable the actions and reactions of actors in concrete social situations. Bourdieu argues, "it is in the struggles between objectively complicit opponents that the value of culture is generated" (1984, p. 250). Because the field of information technology is not currently in the consciousness of many actors, objectively complicit opponents such as governments, educational institutions, and corporations are engaged in projects poised at making people aware that IT is a field in which they will need to participate as informed citizens. Thus projects such as Atlanta's Community Technology Initiative and LaGrange's Freenet Initiative play an important role in providing IT access and training as part of their overall strategy for improving their capacity to participate the global digital economy.

Within a field, each actor's position is determined by the distribution of different kinds of power resources or capital. Bourdieu introduces the concept of capital to describe the material and symbolic resources that are at stake in the field. There are four basic forms of capital: symbolic, cultural, social, and economic. *Symbolic capital* refers to accumulated honor and prestige. *Cultural capital* concerns forms of cultural knowledge, competencies, and credentials. In fact, Bourdieu states that we should speak not of cultural capital but of informational capital, in order to give the concept its full generality (Bourdieu and Wacquant 1992). *Social capital* refers to social networks that one employs to improve social standing, and *economic capital* refers to monetary resources such as property, stocks, and money. Each form of capital is unequally distributed among social groups, but the different forms of capital can be converted under certain circumstances. For example, one can convert economic capital (i.e., tuition payments) into cultural capital (i.e., a college degree).

3   RESEARCH APPROACH

The research employs a research design involving two comparative case studies, one focusing on Atlanta's efforts to bridge the digital divide through the creation of community technology centers, and one focusing on LaGrange's efforts to bridge the digital divide by giving its citizens broadband Internet access in the home. Atlanta was selected for study because it was one of the first community technology center initiatives to be mounted by a municipality (Kvasny 2002), while LaGrange was selected for study because it was the first city in the world to offer free and fast Internet access for every citizen (Meader et al. 2002). Both initiatives were in their first year of operation when the studies were conducted. These two sites were selected using a literal replication logic (Yin 1994) to explore whether providing better access to IT can sufficiently address the digital divide.

3.1 Data Collection

The Atlanta case was studied using an ethnographic research approach that spanned an eight-month period, beginning in January 2001. Data were collected using a variety of techniques including classroom observation, unstructured and semi-structured interviews, document analysis, and informal social contact with the staff and participants. A strategy of purposive sampling was employed to obtain an understanding of the culture through the use of a few knowledgeable key informants. Early weeks in the field consisted mostly of document analysis, informal interviews, and observation in the classroom. The primary intent during this period was building rapport with the informants, gaining initial insights into the emerging classroom rituals, and discovering the lived experiences of the participants. The data collected during this initial stage was relatively unfocused and less guided. After seven weeks in the field, a good level of rapport had developed with the participants and data collection proceeded on a more systematic basis.

Agar's (1986) concepts of breakdowns and resolutions were used to make sense of the data. Breakdowns represent departures from what the ethnographer expects. Data collection then focuses on the resolution of these breakdowns. Resolution was a cyclical process of generating questions and seeking answers until the breakdown became coherent. This movement from break-

downs of established understandings and taken-for-granted assumptions, through resolutions of such breakdowns, to the construction of coherent narratives is the essence of ethnography (Agar 1986). After a total of seven months in the field, breakdowns became less frequent, signaling that it was time to conclude the study (Bernard 1995).

In the case of LaGrange, research began in October 2000 with a visit to City Hall to explore the possibility of writing a teaching case on the city's Free Internet Initiative. In January 2001, Mayor Lukken authorized the research and a series of four visits to LaGrange were made between February and August 2001. Given the exploratory nature of our research, a longitudinal case research approach was employed. The case research methodology is particularly appropriate for answering *how* or *why* questions (Yin 1994). Case research is also desirable because it makes it possible to study the issues in a natural setting (Benbasat et al. 1987; Yin 1994). Finally, the contemporary nature of the events unfolding in LaGrange meant that extensive documentation was available and that the key stakeholders could be located for interviewing.

The research began with an extensive review of published reports and publicly available documentation on the initiatives being undertaken in LaGrange. Next, multiple visits to LaGrange were made to conduct field research. The field research included semi-structured interviews with all of the major stakeholders including government officials, citizens, and business owners. In addition, telephone interviews were conducted with representatives from the cable operator (Charter Communications) and the internet service provider (WorldGate) to obtain the perspective of these stakeholders as well.

A total of 20 interviews were conducted, each lasting an average of 30 to 40 minutes. All interviews were tape-recorded and transcribed, yielding a total of 344 pages of interview transcripts. In addition to the interviews, a variety of documents were gathered both from the public domain as well as from records kept by the City of LaGrange. These data included the number of digital set-top boxes deployed over time, as well as socioeconomic and usage data collected by the city.

3.2 Data Analysis

Data were subjected first to within-case analysis and, later, cross-case analysis. This study employed coding and memoing for reducing data into manageable pieces that could be searched and mined for themes. Coding consisted of two phases: open coding and focused coding, with an aim toward uncovering themes and issues. These themes were coded and then added to the actual field notes using Atlas t/i. In focused coding, the notes were analyzed more systematically looking for relationships between the codes.

To facilitate the coding process, a list of content codes was developed *a priori* and then appended with additional codes that emerged from the fieldwork. The grounded theory technique of *concept cards* was used for classifying and subsequently analyzing data (Glaser and Strauss 1967). In accordance with Miles and Huberman (1994), each concept card contained memos, written-out counterparts, or explanations of the coding categories. Memos consisted of a few lines that defined each code, and whether the code emerged from the data or from *a priori* theoretical constructs. The within-case analysis has largely been completed. We are currently conducting the cross case analysis, and developing societal, theoretical, and policy implications.

4 FINDINGS

4.1 Field

Bourdieu's notions of field, habitus, and capital are employed to understand the residents' perceptions of the municipalities' technology initiative, and why these community technology initiatives have been less successful. According to Bourdieu, individuals and organizations situated in the field of community-based information technology initiatives are united by a mutual belief or *illusio* in the free Internet access, computing resources and basic IT training that the field produces. Mutual belief is created unwittingly as promoters such government officials, journalists, IT vendors, and politicians work together to create a market for these IT products and services. Through market creation activities such as creating blue ribbon planning committees, renegotiating contracts with cable television and Internet providers, and participating in outreach engagements in local churches and housing projects, promoters produce a local market for their IT products and services.

The promoters of the community technology initiatives use their own special motives and interpretations of IT to create community-based products and services that support the techno-scientific and economic rationalities of modernity that values productivity and efficiency in a free market setting.

> Presented as a detached rationality capable to improve human condition, the modernization discourse creates a "regime of truth," passing judgment on social groups, determining their "needs," and prescribing how they should change. Social life is conceived as a technical issue, and its improvement is entrusted to technical experts, capable of rational decision making and management (Avergou 2000).

Bourdieu stresses that the power of the promoters is nothing more than their ability to mobilize citizens' awareness of and belief in the value of a regime of truth in which IT is presumed to empower people, increase levels of social interaction and civic involvement, as well as facilitate easy and widespread access to education and other public and government services (Selwyn 2002). It, therefore, follows that individuals and social groups excluded from using IT will also be excluded from many of the benefits that IT can bring.

The leadership of the Atlanta and LaGrange digital divide initiatives subscribed to the regime of truth and sought to increase IT access and use in underrepresented groups to ensure that they would not be left behind in the digital society. In LaGrange, for instance, one of the primary goals was to encourage workforce education for citizens whose socioeconomic status inhibited the adoption of information technology. This group was targeted in particular because city officials believed that the value that IT could provide to them was greater than the value that would be provided to people already familiar with the technology. Consequently, city officials expressed both surprise and disappointment that interest in the Free Internet Initiative wasn't higher among this target group. The city manager of LaGrange explained:

> There's much greater hesitancy toward embracing technology in our poorer areas than in our wealthy areas. What we've found is just hesitancy, a lack of understanding, a lack of appreciating what it potentially means and breaking through that. We went to a public housing project along with U.S. Senator Max Cleland. It was sort of a little tour of what we were up to; he said some really nice things in Washington about what we were trying to do. We went door to door with our installers on Saturday at a public housing project and nobody was interested. I don't know exactly what the problem is, but to some extent we're missing our target audience. I think it's our biggest concern or disappointment.

> You can look at the street addresses. All these areas here [pointing to a map] nobody deployed. These areas are right around our public housing projects.

In Atlanta, over half of the households in the target population fall below the poverty level, and almost three-quarters of those households have children under the age of 18 years. Since very few of these families own computers or have access to computers and the Internet, city officials believed that these families needed to be provided access to computers to assist with computer literacy, job-skills training, and school projects. In addition, this area's adult population suffers from a high incidence of low-level literacy. Over 60 percent of the population functions at the lowest literacy level. At a level one literacy, an individual can sign her name but cannot locate eligibility from a table of employee benefits; an individual could identify a country in a short article but could not locate an intersection on a street map; and an individual could locate the expiration data on a driver's license but not be able to identify and enter background information on a social security card application. The executive director of the community technology initiative cautions, "if this segment of the population does not get access to computers, does not get the understanding and motivation to include technology in their lives, and does not get assistance with basic literacy skills, the divide will continue to deepen."

Like their counterparts in LaGrange, the city officials and managers at the community technology centers highlighted the significance of IT skills in the labor market, but the centers were not positioned as job-training facilities. Rather, IT skills were seen as an integral component in a broader strategy aimed at improving the residents' economic empowerment. For instance, in a speech delivered by the executive director in 2000, public access to computers is equated to civil rights.

> You heard me use the term cyber rights. I am sure you are saying to yourself, "He must be exaggerating. How can access to computers and the Internet be compared to civil rights?" Hear me clearly, the Civil Rights Movement was one that gave us access to basic democratic rights and institutions: The right to vote, receive equable education; be protected from discrimination on the job and where we can live.…Civil Rights was the vehicle and strategy; equal opportunity was the goal. Public access to computer equipment, training, and knowledge is the means by which we obtain self-reliance, self-actualization, community networking, communications and empowerment. Bridging the digital divide is the strategy. Economic empowerment is the goal.

4.2 Habitus

Viewed from a Bourdieuan perspective, in addition to physical access to the technology, citizens must possess a habitus that is predisposed to share a belief in the values, benefits, and profits that are available to participants in the IT field before they can successfully participate in the community-based technology initiatives. Ms. Williams, a LaGrange resident who own a PC but did not use the WorldGate system, explained:

> It [the Worldgate system] piqued the curiosity of those who really wanted to learn the Internet but didn't have resources or access to it. That is what it does. There have been several people I know that have it in their homes that actually enrolled in West Georgia Tech and enrolled in classes about computers. I think that was a positive thing for those people with a mind to explore.

According to this resident "those people with a mind to explore" and "those who really wanted to learn the Internet" are most likely to participate in the Freenet program. Bourdieu often uses the metaphor of "the prophet always preaches to the converted" to make the point that those individuals and social groups that stand to benefit most from educational opportunities provided through these community technology initiatives are those that are predisposed from the outset to recognize the legitimacy of the regimes of truth surrounding IT.

The crucial implication for community technology initiatives is how to reach the populations that choose not to participate. As the city officials in LaGrange demonstrate, tours by prominent politicians and door-to-door campaigns do not convince nonparticipants to subscribe to the free Internet service. Prior research has found that individuals choose to not use the Internet because they do not want their children to have Internet access, they lack the time or interest, and they do not view themselves as computer users (Strover and Straubhaar 2000).

The habitus is useful for explaining the decision-making strategies that residents employed as they struggled to make sense of the contradictions inherent in the official rhetoric about IT and their daily lives in low-income communities. When provided the opportunity to engage with IT, individuals in these target populations are confronted with a conflict: Do they accept the official rhetoric of cyber rights, employment possibilities, and empowerment even though their past-lived experiences serve as constant reminders of their status in the social hierarchy?

Participants at the Atlanta community technology centers questioned how realistic this message of empowerment was for individuals in low-income, predominantly African American communities given their histories of encountering racism and classism. The habitus comes into effect because individuals must choose a course of action when faced with these contradictions. These decisions are based upon the individual's past experiences and taken-for-granted cultural assumptions (Valdez 2000). The choice to use IT is often driven by considerations such as the individuals' perceptions of what skills were valued by employers, what their skill levels were, and what they needed to do to provide for their families. These beliefs are engendered by their daily experiences and are reinforced by the institutions that control the technology access and training that offers the potential for social mobility.

Ron, a male participant at the Atlanta community technology center, stated that he had "an interest, hunger, and desire to go through the program. But for me, it is just a stepping-stone." Ron entered the program with hopes for employment, and viewed the program as a step toward providing him with computer skills to enter the workforce. However, the low level of training that the institution provided limited his job choices. When asked about his perceived job choices, Ron replied:

> You know how a baby has to be breastfed milk. He can't eat food? Well that's how I feel. They are giving us milk, and this is not enough to feed us. We need to be able to eat food if we want to get jobs.

Valdez (2000) contends that it doesn't matter how well participants accepted the professed ideology of greater employment opportunities for people with computer skills, because this ideology does not provide solutions for overcoming the structural constraints of racial, geographic, and class bias. Senior citizens, more so than any other group, tended to be most capable of transcending the limits of these structural constraints because they had substantially more free time to learn and they were under less financial pressure to hold down a job. Consequently, participating in the computer technology center program was a less-risky choice that offered several perceived benefits such as better relations with friends, improved self-concept, and enhanced coping skills. Ms. Johnson, a senior citizen testifying on behalf of the community technology centers at a City Council Finance Committee Hearing, provides a narrative of tremendous faith, hope, and encouragement.

> I want to make sure that you understand how important this program is. It is giving me a new lease on life. It increases my thoughts, and my ability to learn. The environment is very encouraging. I now have faith and hope. Now I understand that there are things out there for us as we get old. I would like to start a Web business. The [community technology centers] fill a great need. We seniors are now becoming "qualified homebodies." We can fill these jobs.

Ms. Johnson's narrative reflects a view of IT as economic empowerment that will enable her to enjoy a higher quality of life. She sees herself and her peers as "qualified homebodies" that can compete with younger people in the job market. This is a narrative of self-determination that captures the ways in which the IT training experience transformed the senior citizens' worldview: "There are things out there for us as we get old."

4.3 Cultural Capital

In addition to a habitus predisposed for embracing technology, the citizens must posses some minimal amount of IT knowledge or skills (i.e., cultural capital). Ms. Hudson mentions that people "enrolled in West Georgia Tech and enrolled in classes about the computers" as part of their strategy for gaining cultural capital in the form of IT skills and literacy. City Councilman Willie Edmondson, who represented the district encompassing the public housing project, did not come to see the importance of awareness and positive dispositions toward technology until he was forced to develop explanations for the lack of participation:

> I would think that they would have jumped on it. [I guess] if people feel like they don't need it, they won't get it. So that is one thing we have been doing educating our people. That it is a benefit not just for you, but also for your children. You might not need it but your children need it or your grandchildren or your nieces or nephews, those that can't otherwise afford it.

In order to gain a more complete understanding of the role of cultural capital in restricting widespread adoption, we visited a public housing project in LaGrange and interviewed Gwendolyn Clinton, Community Activity and Social Services Director, as well as three residents of the complex (two of whom used the system). Clinton and the resident who did not use the system, Ms. Hudson, both indicated that they had access to a personal computer (PC) and found that to be preferable to the WorldGate system. When asked why she preferred the PC to the WorldGate system, Clinton responded: "Because I like to print [laughter]. That's it. That's the main reason." Concern over the lack of a printing capability on the WorldGate system was a consistent theme that emerged in many other interviews with citizens who were familiar with the system.

Tonyka Bartley was one of the residents of the public housing project in LaGrange who had adopted the system. She believed there were several possible reasons adoption was not widespread: many residents didn't know about the system, they thought it was a gimmick, or they just voluntarily chose not to participate because they may not have realized the benefits. She estimated that around 5 percent of the people she knew had the system installed. Clinton offered the following explanation for the low adoption rate:

> I think it's kind of intimidating to a lot of people. I think it's technology, people are resistant to change and just being unsure. I speak with people from various age groups. With most of the older people, they feel they won't ever be able to do that. No matter how much you say, it's very easy. Just push that button. They are kind of resistant. The younger group finds it fascinating. They're not as intimidated as older groups.

From these quotes, we find that even though the Internet access is being provided for no additional fees, the quality of the access is still crucially important. In Atlanta, quality of access was limited by institutional practices such as time limits on computer use in libraries, and filtering software and policies that restrict downloading of files. To combat computer viruses, the computer lab at the Atlanta Workforce Development Agency established policies that restricted the use of diskettes, and many public access centers did not provide facilities for printing files. Finally, the working order of the computer and network access is paramount. As one participant at the Atlanta community technology center wrote in a letter to the mayor that discussed her frustration regarding broken equipment in the lab:

> What can be done to better the computer in this class so that we can know the basics of this computer? I think the first day there was a problem something should have been done to correct it. We know the program is free so that means that we have to put up with endy [sic] thing, if so why? We want the best.

Culture capital explains *how* social groups consume rather than the more simplistic question of *what* people consume (Holt 1998). Consumption of technology is a status game in which those with relatively lower quantities of the cultural capital or competency required for deciphering IT, a cultural artifact, will tend to consume IT in less distinctive ways. When the facilitator asks the class to bring in a diskette, for instance, many people asked where they could buy a diskette. At the next class meeting, the researcher noticed that about half the class still did not have a diskette. When asked, some participants said that they couldn't get to a store that sold diskettes, and others said that they couldn't afford a box of diskettes. After learning about the difficulties that participants faced in securing a diskette, the researcher made it a point to always bring extra diskettes to class, and those participants with diskettes would also bring extras for their peers. When participants found diskettes left behind at their terminals, they took care to place them near the monitor so that the owner could find them. A diskette was a valuable commodity. The value of a diskette was also displayed in its use. Many of the participants had never touched a computer before coming to the centers, so inserting a diskette into a disk drive was not straightforward. Participants would gently take their diskettes out of their bags, hold them up in the air, inspect them to see whether or not they were write protected, and then inspect the diskette once again to make sure that they were inserting them correctly into the disk drive.

Elderly participants at the community technology center tended to view IT as a means for assimilation and integration within the information society. Their narratives expressed feelings of being left behind and excluded from the multiple resources available on the Internet for civic, democratic, and economic engagement. Doris, for instance, espoused a powerful virtual self in which competence, self worth, and legitimacy were believed to result from the acquisition of IT skills.

> I thought I would be the last one to have an e-mail address. I was once at a meeting and everyone in my group had an e-mail address. I was embarrassed not to have one because everyone else was a senior citizen with some sort of computer knowledge.

This senior citizen believed that digital skills would enable her to alleviate social isolation and increase her ability to participate with her peer group. As an outsider, she felt that IT skills would enable her to "cross over " into the computing culture where "sending e-mail makes me feel like a businessman." IT use was seen as a mechanism for gaining access to opportunity structures that were available to groups that she viewed as more privileged. The view of this participant reinforces the power discourse, which, in this case, is about the use of IT as part of a strategy that upholds the images of more privileged people as those most worthy of emulating. This is a form of identity work practiced by those seeking membership in dominant groups (Schwalbe 2000).

Others view IT skills not as a mechanism for copying the elites, but as a method for retaining their social status and dignity. Parents, for example, described themselves as "the forgotten generation" because their children know more about technology than they do. In the following narrative, Bill describes feelings of demoralization because he perceived that his lack of IT skills detracted from his ability to perform his role as a grandparent.

> Prior to my enrolling into this class, I had no earthly idea about the functions of the computer. My seven-year-old grandson shamed me when he asked me questions concerning computers. Even though there is a 57 year education gap in our knowledge, there is no excuse in the lack of knowledge, especially now that the technology is here [at the community technology center].

The IT is available; nevertheless, participants still face significant barriers such as limited prior experience with technology, fear of technology, and significant demands on their time that inhibit their ability to use the technology. Shame is a powerful emotion because it can bring silence, as those who have been shamed avoid further exposure to the scrutinizing gaze of those who exercise the authority to judge them (Lawler 1999). Bill's quote demonstrates a keen awareness of the social power conveyed by IT but demonstrates resistance and an ability to manage within this power structure.

4.4 Economic Capital

Another explanation as to why the target populations were slow to embrace the Free Internet Initiative is that it isn't really free. To get the free system, one must already have or be willing to pay for basic cable TV at a cost of $8 per month. Gwendolyn Clinton, Community Activity and Social Services Director, believed that lack of basic cable TV services was an obstacle in the public housing project: "It's free if you have basic cable. I'm not sure that a lot of us have that."

While every resident that we spoke with was supportive of the city's initiative, they were also quick to point out that if the service were not free to those with basic cable service, there would be limited demand for the system. As Ms. Williams, an after school activity aide and resident of the public housing project, explained:

> I did a survey of 50 people for my class. About 10 percent of these were elderly people in my class. If it was not offered free, they would not have it in their house. If it was not free, they would not pay for it.

Ms. Hudson, a LaGrange resident who did not use the WorldGate system, explained the role of economics in structuring IT access:

> You have to realize that there are a lot of people in our community on a fixed income. I really do hope that when they decide how much it will be, they will consider that 90 percent of their users are elderly people, teenagers, and young adults. Teenagers do not work and do not contribute anything to the household but a big grocery bill. Elderly people are on a fixed income. Young adults are between teenage years and adult years so they are struggling right now.

Both Hudson and Williams viewed economics as crucially important, but their quotes also situate economic matters into a broader socio-political context. For instance, both residents identified specific groups as experiencing economic constraints in different ways. Older residents are on fixed incomes, teenagers have no income, and parents are "struggling right now." Ms. Hudson also states, "when they decide how much it will be," which suggests that IT access is contingent upon the decisions of government officials. How can someone truly engage with IT in a meaningful manner if they are unsure about their ability to sustain use? Hudson, who also preferred using a PC to access the Internet, indicated that for her, the deciding factors for non-adoption were concern over what the price of the WorldGate system would be after the first free year of usage, and the fact that she already owned a PC and was comfortable with her Internet service provider.

While residents contend that an $8 per month fee is cost prohibitive and uncertain, the city manager failed to see cost as an obstacle because he interpreted the pricing structure from the privileged middle-class perspective:

> I do not believe that it a lack of availability of cable. Under the existing franchise every home has to be served with cable if the customer requests it. I do not believe the $8 per month is the reason that folks in these [low-income] areas are not deploying.

For participants in Atlanta that owned PCs prior to taking courses, the economic costs of computer ownership continued to be problem after the individuals obtained training. Bill, an adult participant, recounted his experience at a local Best Buy electronics store:

> Looking at all of that technology upset me. It made me realize that I really needed to make some money so that I can get the things that I wanted. A job is the only way that I am going to be able to afford those things.

Even though one third of the participants that were interviewed in Atlanta had computers in their homes before they ever set foot in the community technology center, most had older computers that they received for little or at no cost from friends and family members. However, no one with a home PC had Internet access primarily because the recurring monthly charges for Internet access and the associated basic telephone service to act as a gateway to the Internet were deemed to be too expensive. Telephone service in low-income communities is often sporadic because households find it difficult to maintain continuous service (Mueller and Schement 1996). Not only is telephone access expensive, it is in many ways a liability. Without a phone, the home is beyond the immediate reach of the bill collector, and is protected from collect calls from friends and family members. No one can run up outrageous long distance bills, and youth are prevented from calling peers who may be bad influences.

4.5 Social Capital

Many of the benefits derived by the participants at the Atlanta community technology center were not related to the technology per se, but came from social capital. Social capital focuses on the benefits accruing to individuals by virtue of participating in groups, and on the deliberate construction of sociability for the purpose of creating this resource (Pope 2001). For Bourdieu, social capital has two distinct elements: the social relationship itself that allows individuals to claim access to resources possessed by their associates, and the amount and quality of these relations.

It is precisely these existing social networks that brought most people to the community technology centers in the first place, and enabled them to develop into a third place that is comfortable, has low barriers to entry, and is frequented by regulars (Liff and Steward 2001). One participant at the Atlanta community technology center, Bill, describes an incident in which he attempts to convince someone to come to the center:

> When I was standing in line at the bank the other day, I started talking with this security guard to pass the time. I told her about the free computer classes at the Cyber Center, but she didn't want to believe me. The more I kept telling her it was free, the more she kept calling me a liar. So I told her, the next time I come back I'm gonna personally bring her a flyer and tell her to call the number. Now I'm a lot of things, but I ain't no liar.

Don, another participant, discusses how he is teaching a friend to use computers. Most participants at the Cyber Center have adopted this practice, and they describe this form of diffuse education as a responsibility of those individuals within the community that possess IT skills.

> I want to be able to share my knowledge with others. Like, I got this friend who works for [the transit authority] and I was telling him about the Cyber Centers. He is afraid to come. He wants to learn about computers but is intimidated by them. Now he will go and pay to take night classes in reading, writing, and math so he's not afraid of a classroom. But he is intimidated by the technology. He is afraid of computers but he knows that he has to get into them. Now if I have a computer in my house, I can teach him what I learned. Then he could learn from me.

Ms. Barley, a resident in LaGrange, sees community champions as serving a potentially important role in improving the Freenet initiative:

> As far as this community, it would be helpful if you made sure some key people in the community have the Internet. I have found it works for me. In every little section, there is a leader that emerges. That leader, I can go to every apartment unit and put my hand on the person who lives in that section that is going to be the one who keeps their ear to the ground. He/she will go back by word of mouth and tell what is going on. If we could get those people to use the Internet and just talk in their little group, I think we would be able to expand it. More door-to-door contact and feeling more comfortable or more trustworthy of the person giving you the information would be helpful.

While the LaGrange Freenet Initiative brings the Internet into the homes of residents, the Atlanta community technology centers provide a common place for residents to come together to learn and share expertise and resources. Initially the facilitator would encourage participants to help their neighbors. Over time, this became a ritualized practice that greatly helped those that were absent or having difficulty to catch up with the rest of the class.

The emerging social capital also led to an "us against the world" attitude in which participants bonded to take on situations that negatively impacted their ability to learn. For instance, during the weeks when a contract for computer maintenance was being reviewed by the city council, a large number of computers became inoperable. When participants encountered difficulties in performing tasks on the computer, they were not sure if it was something that they were doing wrong or if the problem was a result of the "ragged equipment." Unable to fully appreciate the difficulties inherent in maintaining nearly 300 computers located in geographically disperse locations throughout the city, participants perceived bureaucracy as the primary reason for the lack of computer repairs.

The participants found a creative way to use the technology to signal their frustrations to the staff. One afternoon, the first author entered a computer classroom during lunch break. It was very quiet and, with the exception of the facilitator, the classroom was empty. As the researcher began to get situated at one of the computers, she noticed that the screensaver on each of the 15 computers was running an identical scrolling marquee screensaver with the words "Please fix our computers!!!" in bright fuchsia letters with a green background. As the researcher watched the ingenuous use of IT to symbolically confront the situation, she chuckled and asked the instructor, "Who did this?" He simply looked up from his newspaper, shrugged, and replied, "The students, I guess."

5   DISCUSSION

While the digital divide has been the subject of much debate, relatively little is known about how public policy makers have approached the issue and whether these initiatives will ultimately be successful in addressing the problem. This paper presents

the results of a study of two very different approaches for tackling the digital divide taken by two different cities. We found that providing access to IT—even access that is delivered for free at public institutions or in the home—is insufficient to adequately address the digital divide. Thus the relationship between access and use of IT is not deterministic.

A persistent divide exists even when cities are giving away a theoretically free good or service. These free goods took the form of a training course that delivered basic IT literacy training at public access facilities, and computer hardware of inferior quality and capabilities in the home. Kvasny (2002) observed that the most disadvantaged social groups face significant barriers to effective IT use, but they are exposed to technology training for the shortest length of time. These crash courses and low-end computing resources leave upon participants the stigma of "catching up" and "making due." As one young lady in Atlanta asked rhetorically, "We know the program is free so does that means that we have to put up with anything? If so, why? We want the best."

If individuals do not wish to take part in community technology initiatives, it is quite possible that the problem lies with the elitist assumptions built into these provisions, and not with the nonparticipants. Gorard et al. (2000) suggest that merely providing access to IT in existing educational sites will not necessarily overcome the traditional institutional, situational, and motivational barriers to learning that have prevented many individuals from choosing to learn there previously. The vast majority of community access to IT will be provided through centers housed in existing institutions such as schools, colleges, and libraries, merely repackaging, rather than overcoming, existing institutional barriers to participation. The LaGrange Freenet initiative is a powerful reminder that free Internet access in the home still poses significant barriers to inexperienced IT users.

Policy makers and city officials have accomplished much by providing access and training to underserved communities. While considerable attention has been paid to the economic and technical aspects of these initiatives, we contend that attention must also be paid to the sustainability of the innovative elements: the participants. Chapman and Rhodes (1997) suggest that providing a targeted purpose for using IT apart from mere curiosity may lead to greater opportunities for effective IT use. To overcome some of the structural barriers and to facilitate long-term IT use, community-based institutions must work together to develop innovative programs that provide nontraditional pipelines into more advance IT educational and employment opportunities. Otherwise, the community technology centers and the Freenet services will be underutilized, and we will have simply created yet another system that does not support the interests of the target populations.

6   CONCLUSION

Populations in our society are moving toward a digital future at different rates of change, fueled by different understandings of this effort, following widely differing paths, and dealing with diverse issues and opportunities. The emerging society will be complex and diverse, yet intimately bound with the evolution of computing. IT will be central to some and peripheral to others. This study is directed toward understanding the limitations and promise of programs designed to redress the digital divide.

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