Bridging the Digital Divide for e-Government inclusion: A United States Case Study

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Abstract: This case study of computer-illiterate people in a public housing community was undertaken to explore the digital divide and e-Government inclusion and uses. Overall, the results indicate the importance of a community organizing strategy to secure internet access, coordinate education and training, and sustain internet use to initiate e-Government participation among the techno-disadvantaged. While first-time government website visitation by community participants was surprisingly high, the intent to continue use was lacking. Sustained use remains challenging due to external threats to the community initiative, including isolation from mainstream society, exploitive dependency by those ostensibly assisting the community, and a culture of failure. Public outreach, on the part of governmental and other organizations, is suggested to encourage e-Government inclusion among those previously excluded.

Keywords: e-Government, digital divide, country case study, internet access

1. Introduction

e-Government is the application of information and communication technologies (ICT) to government services. Within the United States (U.S.), the e-Government Act of 2002 was enacted to "create a law that will make it easier to get more government information and services online" (Hasson 2002). The realization of these goals requires that the digital divide be addressed. Indeed, in a study of e-Government use by citizens, the digital divide was found to be more pronounced among government web site visitors than among internet users in general (Thomas and Streib 2003).

This paper explores the digital divide and e-Government inclusion in the U.S. through a case study of computer-illiterate people in a public housing community. This field study of a community organizing strategy was undertaken to reduce the divide by providing computer training to increase computer use and internet access among residents and to understand their inclusion in and uses of e-Government. The factors to be addressed in encouraging e-Government inclusion among the techno-disadvantaged are first considered. Next, the research methodology utilized for this case study is presented. Finally, the results and lessons learned reveal the importance of the community organizing strategy to secure internet access, coordinate education and training, and sustain internet use to enable e-Government inclusion.

2. e-Government inclusion and the digital divide

The most common application of e-Government within the U.S. is providing citizens with access to information via the internet, raising the issue of equal access (Marchionini et al. 2003). A necessary condition for equity in information access is that citizens have internet access. The divide between those with access to the internet and new ICT and those without, or in other words, the gap between the 'technology haves' and 'have-nots' is referred to as the digital divide (Holmes 2002, Novak and Hoffman 2000, OECD 2001, Wilhelm and Thierer 2000). "The Digital Divide is arguably the single, largest, segregating force in today's world. If it is not made a national priority, a generation of children and families will mature without these tools that are proving to be the key to the future" (PR Newswire 2000). Indeed, the need to overcome the digital divide (Goodman and Brenner 2002) has been recognized by the G8 in their Digital Opportunity Taskforce (2001).

In a study addressing the adoption of e-Governance, public internet access was found to be the most important factor affecting the use of online government services (Prattipati 2003). For example, the 1996 U.S. national conventions of the Republican and Democratic parties were carried over the internet, giving opportunities for interaction. While the internet has the potential to create well-informed and empowered consumers, it will also help to change the passive relationship most people have with the government (Symonds 2000). However, people who did not have internet access could not participate in the "point-and-click" debate. In March 2000, Arizona registered voters with internet access were given an opportunity to vote online in the Democratic Party primary during the 96-hour period leading up to the opening of the polls (Wilhelm and Thierer 2000). Those without internet access were able to exercise their voting rights for just one day at the

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polling place. Exclusion from online voting, and other interactive opportunities, will weaken the voice of those who are techno-disadvantaged (Althoff 2004). These individuals are among the citizens likely to benefit most from government services (Lamb 2004). If the digital divide is not bridged, the powerful communication tools meant to enrich lives will serve as a social divider.

Empirical evidence suggests that simply providing access to ICT does not guarantee its use unless the concerns and abilities of users are addressed (Brookes 2004). This study reports on a community-based initiative to reduce the digital divide by surveying community needs. Providing access to ICT, and training participants in computers and the internet, thereby increasing their capability to participate in and use e-Government. For a detailed discussion of narrowing the divide within this community, please see Sipior et al. (2004).

3. Methodology

e-Government inclusion and the digital divide emerged as a focus of concern in the 1990s and is thus a relatively new area of research in which few previous studies have been done. At an early stage of investigation, the research is exploratory, for which a single case study is appropriate (Benbasat et al. 1987 and Galliers 1992). The selection of the William Penn (WP) Housing Development, comprised of 158 households, is based on the community members as representative of the technologically disadvantaged. Few possessed skills or training in computer technology and the community had virtually no access to computer technology. The authors serve as volunteers within the community, which cultivated familiarity and trust necessary to collect data (Rubin and Rubin 1995). Any unintended influence of the authors is minimized as they were volunteers among several other volunteers who were not aware of the research objectives. Further, only two of the authors knew all research objectives.

Both positivist and interpretive data were collected. The positivist measures are based on survey data. The interpretive data includes contextual data; observation, including participant observation and volunteer fieldwork; community members' written and oral comments from informal interaction and feedback forms; documentary sources including internal community meeting minutes, memoranda, and reports; written and oral communications between the community and interested parties; published reports; and a class action lawsuit, providing a richer data set for broadened insight (Myers 2003; Silverman 1993). The hermeneutics approach (Larsen and Myers 1997; Myers, 2003) was employed to interpret the meaning of the data. Standards for the quality of conclusions drawn were incorporated, with the "justificatory" point of view supported by convergence among the multiple field workers involved (Miles and Huberman 1994) primary among them.

3.1 A United States case study

Applying the theoretical premises of the Assets-Based Community Development Model (Kretzmann and McKnight 1993), a community organizing strategy was initiated within the WP Housing Development. According to this model, an effective local organizing strategy is fundamental to successful community empowerment and community self-sufficiency. In applying this model, the WP Tenants Association initiated a community development plan, with assistance from volunteers including the authors; a Community Organizer, a position held by a professional community program planner; and Unity Center, Inc., a nonprofit corporation founded in 1987 to "bring people together who would normally not come together" to work on a common project. A community survey was undertaken in fall 1999. The results, with a response rate of 37.5%, revealed 60% of households have one or more members in need of employment. Job skills and/or specialized training, however, are present among the households surveyed, with 30% skilled or trained in construction and 24% in nursing and healthcare. While 20% expressed a strong interest in further education and/or training in construction and 28% in nursing, 46% indicated computer training. Indeed, only 12% reported job skills and/or specialised training in computer technology. Conspicuously, none had a computer in their home.

The WP Tenants Association Preliminary Development Plan (WPTA 1999) was formulated based on the results of the community survey. Among the priorities of the plan is access to technology and technological skills. As a result, a computer training program was launched in the fall of 2000 and continues through the present. This program provides on-site training to members of the community by university students. This study focuses on the first training session in the fall of 2000, at the completion of which a participant survey was administered.

3.1.1 The case context: The William Penn housing development

The WP housing development is located in Chester, Pennsylvania (PA), U.S., which occupies 4.8 square miles in Delaware County (Brief of

Amicus Curiae 1998). This formerly industrial city is “one of the most distressed cities in the nation" (council of the city of Chester 1994). The low-income population of 39,000, which has the highest infant mortality rate in PA, is 65% African-American (Worsham 2000). By contrast, the remainder of Delaware County is 91% White (Brief of Amicus Curiae 1998).

In 1987, a class action suit, *Clements v. City of Chester* (1990), was filed by all residents of 1,732 Chester Housing Authority (CHA) public housing units claiming "substandard, intolerable and uninhabitable" housing including "dark hallways strewn with garbage, human waste, and the thrown-away paraphernalia of drug and alcohol activity; inadequate plumbing and sewage; unsafe electrical systems; leaking roofs; and doors without locks" (*Clements v. City of Chester* 1990). As a result, Chester demolished substandard housing units in the early 1990’s and built new housing. The WP Housing Development, completed in March 1999, includes reasonably attractive garden apartments and a multi-room community centre, surrounded by deteriorating houses, vacant lots, and high crime. The disturbing presence of social ills such as low educational performance, teenage pregnancy, vandalism, graffiti, noise, trash, drug use on the streets, violence, crime, drive-by shootings, murders, etc. fosters a culture of failure.

The authors discover that external threats obstruct progress within the community. Isolation from mainstream society not unlike that of an inner city, exploitive dependency fostered by those ostensibly trying to make improvements, and a culture of failure contribute to the lingering divide. Data in support of these external threats may be found in Sipior et al. (2004).

3.1.2 The training program

Plans for the WP Tenants Association Computer Training Program began in March 2000 with a proposal to Villanova University’s Institute for Teaching and Learning. After overcoming dissent from local government, a training site at the Community Centre was secured. Local law firms donated 15 PCs. Students from local schools donated 14 refurbished PCs and made the on-site Computer Lab functional. An emergent community leader took the initiative to publicize the program and distribute fliers and sign-up forms. As word of mouth spread, newly interested individuals started showing up at weekly planning meetings, gaining ownership of the program. Motivation to voluntarily participate was provided by the promise of a refurbished PC to take home for those completing the Training Program. As word of this initiative spread, a second location, equipped with 15 computers, was developed at In the Name of Jesus Outreach Church, within two miles of the WP Housing Development. The program “kicked off” in September 2000 and concluded in December 2000. Participants successfully fulfilling program requirements completed a survey and received certificates and free refurbished PCs.

The training content is directed toward varying levels of computer experience. The topic of the internet is addressed in accordance with the objectives of the Development Plan (WPTA 1999) including Objective 3: Develop a community webpage and Objective 8: Develop a community network through internet connection. A community webpage was planned but deferred until Spring 2001 when web development software was to be installed. Objective 8 was deferred until PCs and internet connection are installed within homes in the community. The student trainers demonstrated their own personal websites for the purpose of advancing Objective 3.

4. Results

4.1 Demographic characteristics of the techno-disadvantaged Community

The key to bridging the divide is considered to be internet use (Keller 2001). When reported in conjunction with the most important demographic characteristics of the techno-disadvantaged (www.ntia.doc.gov 1999), the community participant characteristics are consistent with those on the disadvantaged side of the divide, as shown in Table 1.

4.2 Participants

Participant characteristics are presented in Table 2. Of the 60 community members who voluntarily began the program, 31 met the requirements set forth by the Technology Committee to receive a Participation Certificate. To qualify, the participant was required to attend at least 19 of the 22 classes.

Table 1: Internet use among community participants compared with previous findings characterizing the disadvantaged side of the divide

Demographic Characteristic	Community Participants (n = 31)	Comparable Statistic within the U.S.
AGE	MEAN IS 43; IN 35-44 AGE GROUP, NONE USE INTERNET	In 35-44 age group, 39.8% use internet (www.ntia.doc.gov 1999)
EDUCATIONAL ATTAINMENT	MODE IS HIGH SCHOOL DIPLOMA/ EQUIVALENCY; 6.45% USE INTERNET	Of those with a high school diploma/ equivalency, 20.9% use internet (www.ntia.doc.gov,1999)
RACE	100% AFRICAN-AMERICAN; 6.45% USE INTERNET	Among African-Americans, 19% use internet (www.ntia.doc.gov 1999)
Household Income (US$)	Mode is 15-25,000; 6.45% use internet	Average in PA: 43,742, U.S.: 42,148 (U.S. Census 2001); Of households with income <25,000, 19% use internet (U.S. Census 2001)
HOUSEHOLD TYPE	MODE IS MARRIED COUPLE WITH CHILDREN <18; 6.45% USE INTERNET	Among married couples with children <18, 37.6% use internet (www.ntia.doc.gov 1999)
Geographic Location	Chester, PA USA population is 39,000; has neither DSL nor cable modem	Towns with population <10,000, <5% have DSL or cable modem; Cities with population >100,000, 56% have DSL; Cities with population >250,000, >65% have cable modem (U.S. Department of Commerce 2000)

Table 2: Characteristics of the community participants

Demographic Characteristic	Community Participants (n = 31)
Age	Range: 13-65 years of age Mean: 43
Sex	Male: 32.3% Female: 67.7%
Educational Attainment	Mode: 74.2% High school diploma
Race	African American: 100%
Employed	Overall: 58.1%
Household Income	Mode: US$15-25,000
Household Type	Mode: 38.7% Married with children

4.3 Internet access, computer skills, and e-Government inclusion

Keys to bridging the divide are home internet access (Keller 2001) and successful learning of computing skills (DiMaio et al., 2002 and Holmes 2002). The key for increasing use of government websites is public internet access at a nominal cost or no cost (Prattipati 2003). A case study of Singapore's success in providing e-Government reinforces the necessity for internet access at home and education programs to enhance computer literacy and awareness of e-Government (Wei and Ke, 2004).

The WP tenants' association office in the community centre was equipped with five stand-alone 486s at the time the training program was planned, providing access to PCs by community members, but no internet connection. There were no public libraries in Chester, however, the Crozer Library, a private, non-profit corporation stated it would "soon offer computers with internet access" (www.chestercity.com 2000). Within the Chester/Upland school district, computer labs, with internet connections, were installed within the prior year, but use was not fully integrated within the curriculum. Neither cybercafés nor DSL or cable modem service are available within Chester. When the training program began, two dial-up modems competed for use of the only phone line in the Community Centre office. Internet access was obtained through Kmart's then free BlueLight.com. Thus, internet connectivity was limited, slow, and sometimes unavailable due to overwhelming demand for BlueLight.com.

To promote home internet access, participants fulfilling the requirements of the training program received free refurbished PCs to take home. The

PCs provided may have lacked modems, and internet connectivity in homes remains unsupported. However, 7.1% of 158 households in the WP housing development received PCs, some with the potential for internet connectivity, compared to the previous none.

Participants were asked to rate their computer experience. As shown in Table 3, 24 (77.4%) rated themselves as beginners (described as no experience or games only) before the training program. After training, the majority no longer perceived themselves to be beginners, with only 6 (19.4%) rating themselves at this level.

Table 3: Community participant's self-assessment of computer experience

Computer Experience	Community Participants (n = 31)			
	Before Training		After Training	
	Frequency	Percent	Frequency	Percent
Beginner	24	77.4	6	19.4
Intermediate	2	6.5	5.14	45.2
Advanced	5	16.1	11	35.5

4.4 e-Government -uses

Equipped with access and computer skills, the community participants freely visited websites. Of the 31 participants, 19 (61.3%) reported to have visited a government website. Table 4 compares the characteristics of these participants with all 31 community participants. No significant difference was found between participants reporting government website visitation and no government website visitation. Contrasting government website users with general internet users, a study examining how citizens contact government websites reported government website users were more likely to have higher income levels, be more educated, and younger than general internet users (Thomas and Streib 2003). These users were also more likely to be white, but no difference was present for urban contrasted with rural residents. Internet use in general was found to increase with income and education, but decrease with advancing age. Further, use is higher among whites compared to non-whites and higher among urban dwellers than rural residents.

4.4.1 Government website visitation

The nearly two-thirds of participants reporting government website visitation is surprisingly high compared with the general population. For example, Thomas and Streib (2003) found 37.8% of 459 respondents reported visiting a website in the last 12 months. This same study examined reasons for visiting government websites, stating "Web contacts seem likely to be prompted by a relatively specific need, and they seem more likely to come from those who have greater stakes and greater interests in government" (Thomas and Streib 2003, p. 86).

As previously discussed, the residents of the WP Housing Development have been involved in a long-standing acrimonious relationship with local government. For example, the request to use space in their own community centre for the training program, unused except to store trash cans, was stiffly opposed and denied repeatedly by the CHA. Interestingly, these negative experiences motivated participants to visit the website for the city of Chester and the CHA. Participants, engaged as a group, were observed gathering around one PC to visit to these websites. The visit was experienced as a group.

However, no participant indicated the intent to visit a government website again, indicating the visit was for one purpose, obtaining information, and occurred as a part of group interaction. Although the participants' experience with local government was negative, a previous study investigating citizen attitudes and federal e-Government use found no significant relationship between the two (West 2004). Specifically, views of trust in government, confidence in government, or belief that government is effective at solving problems and helping people were not significantly related to visiting federal government websites.

Table 4: Comparison of community participant visitors to government websites with all community participants

Demographic Characteristic	Respondent Type			
	Community Participant Visitors to Government Websites (n = 19)		All Community Participants (n = 31)	
	Frequency	Percent	Frequency	Percent
Household Income (US$)				
Below 15,000	5	26.3%	11	35.5%
15-25,000	6	31.6%	9	29.0%
25-35,000	4	21.1%	6	19.4%
35-45,000	2	10.5%	3	9.7%
Over 45,000	1	5.3%	1	3.2%
Missing value	1	5.3%	1	3.2%
Age				
Under 18	3	15.8%	3	9.7%
18-29	5	26.3%	5	16.1%
30-44	4	21.1%	7	22.6%
45-64	7	36.8%	15	48.4%
65+	0	0%	1	3.2%
Educational Attainment				
No High School	1	5.3%	1	3.2%
Some High School	1	5.3%	2	6.5%
High School Equivalency	3	15.8%	5	16.1%
High School Diploma	14	73.7%	23	74.2%
Race: African-American	19	100%	31	100%
Household Type				
Single	4	21.1%	5	16.1%
Single with children	6	31.6%	9	29.0%
Divorced with children	1	5.3%	5	16.1%
Married with children	8	42.1%	12	38.7%
Geographic Location-Urban	19	100%	31	100%
No significant difference between groups.				

4.4.2 Computer experience and government website awareness

A significant relationship between computer experience and awareness of government websites was found. As shown in Table 5, Pearson Chi-Square is 15.353, significant at the .05 level. This significant relationship is consistent with findings from a previous study addressing attitude toward participation in e-Government (Charbaji and Mikdashi 2003). This previous study however, examined the unidirectional causal relationship of awareness preceding knowledge of the internet, but the population surveyed were all experienced users having used the internet for an average period of 2.5 years. The participants in this study represent those on the disadvantaged side of the divide. Thus, computer experience was first gained through the Training Program, providing participants with an understanding of the internet and websites. The unidirectional causal relationship of computer experience as a predictor of the number of government websites of which a participant is aware is significant, with a Somers' d value of .342, significant at the .05 level (see Table 5).

Table 5: Cross tabulation of computer experience with government website awareness

		Number of Websites Aware				Row Totals
		0	1	2	3	
Computer Experience	Beginner	n=2 p=.14	n=2 p=.5	n=2 p=.18	n=0 p=00	n=6 p=.19
	Intermediate	n=10 p=.71	n=2 p=.5	n=2 p=.18	n=0 p=00	n=14 p=.45
	Advanced	n=2 p=.14	n=0 p=00	n=7 p=.64	n=2 p=1	n=11 p=.35
	Total	n=14 p=.45	n=4 p=.13	n=11 p=.35	n=2 p=.07	n=31
Pearson Chi-Square = 15.353, significant at the .05 level with a low cell count						
Somers' d = .342 for Computer Experience as the dependent variable, significant at the .05 level						

Table 6: Cross tabulation of computer experience with government website visitation

		Visited Website		
		Did not	Did	Row Totals
Computer Experience	Beginner	n=3 p=.25	n=3 p=.16	n=6 p=.19
	Intermediate	n=9 p=.75	n=5 p=.26	n=14 p=.45
	Advanced	n=0 p=00	n=11 p=.58	n=11 p=.35
	Total	n=12 p=.39	n=19 p=.61	n=31
Pearson Chi-Square = 11.130, significant at the .01 level with a low cell count				
Somers' d = .395 for Computer Experience as the dependent variable, significant at the .01 level				

4.4.3 *Computer experience and government website visitation*

Computer experience was found to be a significant predictor of government website visitation, as shown in Table 6 by the Somers' d value of .395, significant at the .01 level. This finding is consistent with previous studies. For example, Charbaji and Mikdashi (2003) found knowledge in using the internet to be a significant predictor of e-Government use.

4.4.4 *Government website awareness and visitation*

As shown in Table 7, government website visitation can be predicted from the number of websites of which the participant is aware, as indicated by Somers' d of .596, significant at the .01 level. This finding is consistent with previous studies. For example, Charbaji and Mikdashi (2003) found awareness leads to participation in e-Government. All participants who visited a government website were able to list at least one site when asked to name specific websites of which they are aware. Participants identified those of the City of Chester and the CHA. Only the two youngest participants, aged 13 and 16, named and visited a third website, the Southeastern Pennsylvania Transportation Authority (SEPTA), the regional public transit authority for Philadelphia and the surrounding areas.

Table 7: Cross tabulation of government website awareness with website visitation

		Visited Website		
		Did not	Did	Row Totals
Number of Websites Aware	0	n=11 p=.92	n=3 p=.16	n=14 p=.45
	1	n=1 p=.08	n=3 p=.16	n=4 p=.13
	2	n=0 p=00	n=11 p=.58	n=11 p=.35
	3	n=0 p=.00	n=2 p=.11	n=2 p=.06
	Total	n=12 p=.39	n=19 p=.61	n=31
Pearson Chi-Square = 17.904, significant at the .01 level with a low cell count				
Somers' d = .596 for Number of Websites Aware as the dependent variable, significant at the .01 level				

5. Lessons learned

This case study was intended to provide insight into e-Government inclusion of those on the disadvantaged side of the digital divide. Removal of barriers that exclude individuals from participating in the digital age is a prerequisite to e-Government inclusion. The application of the assets-based community development model (Kretzmann and McKnight 1993) as a community organizing strategy enables the identification of community needs. In this case, internet access and training in computing skills was necessary in order that actual computer use be realized. This computer experience led to government website awareness and visitation. The first visit may be encouraged by group activity devoted to a specific or compelling reason. This insight is consistent with the finding that e-Government be not only technically accessible, but usable and engaging (Donnelly and Merrick, 2003).

Continuation of internet use within the community is challenging. Only two PCs are equipped with modems at the community centre computer lab. The 31 PCs, awarded to those who successfully completed the training program, may have lacked modems and no formal technical support is provided. Internet access is attained through use of a free dial-up internet access service, which is not consistently available. Sustaining momentum in internet use requires motivated community members dedicated to continuing the community

organizing strategy with the goal of community self-sufficiency.

Participants overwhelmingly expressed gratitude for the opportunity to participate in the training program, as such opportunities were perceived as lacking. Designed with and for the community, the program provided ownership and an environment conducive to learning. However, participants recognized the necessity to persevere in the struggle to overcome external threats to the community initiative, including isolation from mainstream society, a culture of failure, and exploitive dependency by those ostensibly trying to make improvements. By forming links and partnerships with those external to the community, such as neighborhood institutions, employers, and developers, the external threats may be reduced.

While first-time government website visitation was surprisingly high among the community participants, the intent to continue use was lacking. One-time use did not foster e-Government inclusiveness among the techno-disadvantaged. The community itself was able to begin building an environment enabling internet access and use through a community organizing strategy. The community reached out to form links and partnerships with external entities to work toward achieving its goals of attaining internet access and associated training. Sustained use remains a challenge due to external threats to the community. This suggests the necessity for public outreach, on the part of governmental and other organizations, to encourage e-Government inclusion among those previously excluded.

References

Althoff, Susanne (2004) “Point, Click, Elect Should Voting Be That Easy?” Boston Globe, Boston (MA), March 7, p. 26.

Benbasat, I., Goldstein, D.K., and Mead, M. (1987) “The Case Research Strategy in Studies of Information Systems,” MIS Quarterly, Vol 11, No. 3, pp 369-386.

Brief of Amicus Curiae of Chamber of Commerce of the United States of America, National Black Chamber of Commerce, Inc., and Pennsylvania Chamber of Business and Industry in Support of Petitioners, (1998) Seif (No. 97-1620) available in Chester Residents Concerned For Quality Living v. Seif, 132 F.3d 925 C.A.3 (Pa.), WL457676.

Brookes, Robert, (2004) “Slipping Through the Net? A Study of the Effectiveness of Current UK Policy Regarding Public Access to Information Communications Technology,” Proceedings of the 4th European Conference on E-Government, June, Trinity College Dublin, Ireland, pp. 91-98.

Charbaji, A. and T. Mikdashi (2003) “A Path Analytic Study of the Attitude Toward E-Government in Lebanon,” Corporate Governance, Vol 3, No. 1, pp 76-82.

Clements v. City of Chester (1990), 1990 WL 92523, E.D.Pa.,1990, June 28, 1990.

City of Chester (2000) [online], http://www.chestercity.com.

Council of the City of Chester (1994) “Chester City Vision 2000, Comprehensive Plan & Economic Development Strategy.”

Digital Opportunity Taskforce (2001) “Genoa Plan of Action,” Digital Opportunities for All: Meeting the Challenge, May 11, [online], http://www.dotforce.org/reports.

DiMaio, A., Baum, C., and Keller, B. (2002) “Five Truths and Five Myths to Cross the Digital Divide,” Gartner Research Note (TG-14-3578) February 1.

Donnelly, V. and Merrick, R. (2003) “Community Portals through Communitization,” Proceedings of the ACM Conference on Universal Usability, Vancouver, British Columbia, Canada, 9-14.

Galliers, R.D. (1992) “Choosing Information Systems Research Approaches,” in Robert D. Galliers (ed.) Information Systems Research: Issues, Methods, and Practical Guidelines, Alfred Waller Ltd., Henley-on-Thames, pp 144-162.

Goodman, M. D. and Brenner, S. W. (2002) "The Emerging Consensus on Criminal Conduct in Cyberspace," UCLA Journal of Law and Technology, Vol 3.

Hasson, J. (2004) “E-Gov Act signed into law,” Federal Computer Week, 28 February 2004, [online], http://www.fcw.com/fcw/articles/2002/1216/web-egov-12-17-02.asp.

Holmes, T.E. (2002) “Crossing the Digital Divide,” Black Enterprise, April, pp 51.

Keller, B. (2001) “Best Practices for Overcoming the Digital Divide,” Gartner Research Note, (COM-13-3435) April 10.

Kretzmann, J. and McKnight, J.P. (1993) Building Communities from the Inside Out, ACTA Publications, Chicago.

Lamb, J. (2004) “Epublic: Access: A personal map of cyberspace,” The Guardian, Manchester (UK), March 24, p 9.

Larsen, M.A., and Myers, M.D. (1997) “BPR Success or Failure? A Business Process Reengineering Project in the Financial Services Industry,” Proceedings of the Eighteenth International Conference on Information Systems, pp 367-382.

Marchionini, G., Samet, H., and Brandt, L. (2003) "Digital Government," Communications of the ACM, Vol 46, No. 1, pp 24-27.
Miles, M.B. and Huberman, A.M. (1994) Qualitative Data Analysis, Sage Publications, Thousand Oaks.
Myers, M.D. (2003) "Qualitative Research in Information Systems," [online], MISQ Discovery, March 18, http://www.qual.auckland.ac.nz.
Novak, T. and D. Hoffman (2000). Bridging the Digital Divide: The Internet of Race on Computer Access and Internet Use, (http://elab.vanderbilt.edu/research/papers/html/manuscripts/race/science.html).
OECD (Organization for Economic Co-operation and Development) (2001) "Understanding the Digital Divide," [online], http://www.oecd.org/dataoecd/38/57/1888451.pdf.
PR Newswire (2000) "Congress Seeks to Bridge Gap between Tech Haves and Have Nots; Legislation Aimed at Inner Cities, Rural America, 13 New Co-Sponsors Join Bills Bridging Digital Divide Possible," September 12.
Prattipati, S. N. (2003) "Adoption of e-Governance: Differences between countries in the use of online government services," Journal of American Academy of Business, Vol 3, Issue 1/2, p 386.
Rubin, H. J. and Rubin, I.S. (1995) Qualitative Interviewing: The Art of Hearing Data, Sage Publications, London.
Seville European Council (2002) "eEurope 2005: An information society for all, Executive summary," [online], http://europa.eu.int/information_society/eeurope/2002/news_library/documents/eeurope2005/execsum_en.pdf, June 2002, Last update: 25/09/2003.
Silverman, D. (1993) Interpreting Qualitative Date: Methods for Analyzing Talk, Text, and Interaction, Sage Publications, London.
Sipior, J.C., Ward, B.T., Volonino, L., Marzec, J.Z. (2004) "A Community Initiative that Diminished the Digital Divide," Communications of the AIS, Vol 13, Article 5, January, pp 29-56.
Symonds, M. (2000) "Government and the Internet: Digital Democracy," The Economist, June 24, p. not available.
Thomas, J.C. and Streib, G. (2003) "The New Face of Government: Citizen-Initiated Contacts in the Era of E-Government," Journal of Public Administration Research and Theory, Vol 13, No. 1, pp 83-102.
U.S. Census (2001) [online], http://www.census.gov.
U.S. Department of Commerce (1999) "Falling Through the Net: Defining the Digital Divide," November, [online], http://www.ntia.doc.gov/ntiahome/digitaldivide
U.S. Department of Commerce (2000) "National Telecommunications and Information Administration and United States Department of Agriculture – Rural Utility Service, Advanced Telecommunications in Rural America: The Challenge of Bringing Broadband Service to All Americans," April, [online], http://www.ntia.doc.gov/reports/ruralbb42600.pdf
Wei , K.K. and Ke, W. (2004) "Successful e-Government in Singapore," Communications of the ACM, Vol 47, No. 6, pp 95-99.
West, D.M. (2004) "E-Government and the Transformation of Service Delivery and Citizen Attitudes," Public Administration Review, Vol 64, No. 1, Jan/Feb, pp 15-27.
Wilhelm, A.G. and Thierer, A.D. (2000) "Should Americans Be Concerned about the Digital Divide," Insight on the News, Vol 16, No. 33. September 4, p. not available.
William Penn Tenants Association (WPTA) (1999) "Preliminary Development Plan," December.
Worsham, J.B.L. (2000) "Disparate Impact Lawsuits Under Title VI, Section 602: Can A Legal Tool Build Environmental Justice?" Boston College Environmental Affairs Law Review Vol 27, No. 631.

