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Recommended Citation

Madeleine M. Plasencia, *Telecommunications in the Twenty-First Century: Global Perspectives on Community and Diaspora Among Netcitizens*, 52 *Admin. L. Rev* 1033 (2000).

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TELECOMMUNICATIONS IN THE TWENTY-FIRST CENTURY: GLOBAL PERSPECTIVES ON COMMUNITY AND DIASPORA AMONG NETCITIZENS

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INTRODUCTION

The Internet brings heady communications opportunities to those who have access to the Internet. Yet, mounting evidence has proven that a gap or divide exists on Internet usage and access. The divide exists within the United States and, increasingly, on a global basis. Part I of this Article introduces the term "digital divide" and explores the deployment of advanced telecommunications in the United States. Part II traces patterns of access to the Internet based on race and income and subordinates the statistical evidence to the realities of lack of access, and lends a human face to contextualize the real losses at the most practical level of living without access to advanced technologies. Part III focuses on the telecommunications indus-

* Assistant Professor of Law, University of Tulsa, College of Law. The author wishes to acknowledge the generous comments made by attendees and participants in the Communications Law in the Next Millennium conference held on April 12, 1999, at the American University Washington College of Law where remarks from a prior version of this paper were first presented. Further acknowledgements are in order to Keith Aoki, Margalynne Armstrong, and Leonard M. Baynes who have encouraged and inspired my interest in intellectual property and race. The author thanks the University of Tulsa for grant support in the preparation of this article. Any omissions or errors are solely those of the author.

try's presence worldwide. With this information, this Article concludes that serious consideration of global gaps by U.S. businesses should be addressed and remedied to promote social and economic stability among all netcitizens.

I. A DIGITAL DIVIDE¹

Imagine that it is June 19, 1865. On this day, slaves in Texas discovered that slavery had been outlawed throughout the United States. The familiar story of "Juneteenth" as it is commonly known,² commemorates the delayed discovery by Texan slaves that they had been freed "in accordance with a proclamation from the executive of the United States" signed years earlier.³ It took a federal envoy to carry the message of freedom to the immense Lone Star State. It was delivered by Brevet Major General Granger, commander of all federal troops. Upon entering Galveston, Granger formally announced the abolition of slave labor and the "absolute equality of personal rights and rights of property between former masters and slaves."⁴

In the twenty-first century, information apartheid continues to exist.⁵ "Yet in ways more subtle but nevertheless insidious, some people lack ac-

1. See NAT'L TELECOMMS. & INFO. ADMIN., U.S. DEP'T OF COMMERCE, *FALLING THROUGH THE NET II: NEW DATA ON THE DIGITAL DIVIDE* (1998) [hereinafter *FALLING THROUGH THE NET II*]; William E. Kennard, *Equality in the Information Age*, 51 FED. COMM. L.J. 553, 555 (1999) ("According to a recent study by Forrester Research, the E-rate has had a significant impact on bridging the digital divide. This year, it is estimated that African-American access to the Internet will rise 42 percent, and Hispanic access will increase by 20 percent."); Steve Lohr, *A Nation Ponders Its Growing Digital Divide: Weighing Costs of Information-Age Access for Every School and Library*, N.Y. TIMES, Oct. 21, 1996, at D5; see also Eric R. Biel, *The Impact of Technological Change on Developing Countries*, 25 CAN.-U.S. L.J. 257, 258-59 (1999) (stating that digital divide may widen between developed and developing countries).

2. See BENTON FOUNDATION, *LOSING GROUND BIT BY BIT: LOW-INCOME COMMUNITIES IN THE INFORMATION AGE* iv (1998) (referring to Tony Riddle, Executive Director of Manhattan Neighborhood Network, who tells story of Juneteenth to promote central role of information dissemination in social welfare programs).

3. RANDOLPH B. CAMPBELL, *AN EMPIRE FOR SLAVERY: THE PECULIAR INSTITUTION IN TEXAS 1821-1865*, 249 (1989); see also BARRY A. CROUCH, *THE FREEDMEN'S BUREAU AND BLACK TEXANS 12-13* (1992) (stating that Texas was one of the last states to create the Bureau of Refugees, Freedmen, and Abandoned Lands).

4. CAMPBELL, *supra* note 3, at 249 (citation omitted).

5. See Ed Rose, *The Haves and the Have-Nots*, COMM. WORLD, Nov. 1, 1994, available in 1994 WL 13211289 ("U.S. slaves' expectations that they'd receive 40 acres and a mule when they were freed from bondage were a fantasy. Let's not let equal access to America's electronic future become a fantasy as well. We as information haves must 'walk the walk,' not merely 'talk the talk.'").

cess to the emerging information resources of the digital age."⁶ Others have touted the Telecommunications Act of 1996, with its purpose of increased access, as nothing short of the crumbling of the Berlin Wall in the telecommunications industry.⁷ Evidence shows otherwise.

When income is constant, disparities in access to advanced technologies, and even basic communication technologies, emerge based on race.⁸ African-Americans and Latinos continue to lag between six and eight percentage points behind Whites in access to household telephones.⁹ Although not proxies for each other, race and income, as correlates, exacerbate these troubling patterns. For example, a 1998 Vanderbilt University study indicates that racial inequities in computer ownership and Internet access jump significantly when household income drops below \$40,000.¹⁰ In such cases, African-Americans were less than half as likely as Whites to own a home computer, and about sixty percent as likely to have Internet access.¹¹

6. BENTON FOUNDATION, *supra* note 2, at iv; *see also* Kennard, *supra* note 1, at 553. William Kennard, Chair of the Federal Communications Commission, stated: "By [the year 2000], it is estimated that 60 percent of all jobs will require technical skills that most Americans do not have, and the workers in these jobs earn wages that are on average 10 to 15 percent more than those of other workers." *Id.* at 554.

7. FCC Commissioner Susan Ness, Remarks at the Public Policy Forum Series at the Wharton School of The University of Pennsylvania, *The New Telecommunications Marketplace: Radical Changes and Golden Opportunities* (Feb. 22, 1996) (citing Vice President Al Gore's statement at the signing ceremony of the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified at 47 U.S.C. § 151)).

8. Discrimination, psychological, and cultural barriers have led to infrequent minority participation in technology. *See* Madeleine M. Plasencia, *The Politics of Race on the Electronic Highway: An Analysis of the Video Dialtone Redlining Cases, and the NYNEX Consent Decree in Roxbury*, 15 *TOURO L. REV.* 513, 516-23 (1999) (discussing cases where consumer groups asserted that Video Dialtone's service providers were discriminating against African-Americans, Latino and Asian communities); Jube Shriver, Jr., *Busting the Barriers to Cyberspace*, *L.A. TIMES*, Mar. 29, 1995, at A1 (citing statistics from a 1993 Census Bureau study which demonstrated that less than 14% of adult blacks and Latinos and 8% of the elderly have computer access at home compared with 26.9% of whites).

9. *See* FALLING THROUGH THE NET II, *supra* note 1 (stating telephone penetration also continues to vary by race/origin, as illustrated by the fact that Blacks and Hispanics lagged nearly 10 percentage points behind Whites in 1989 (86% and 86.5% respectively, compared to 95.9%)) (referencing Chart 4).

10. *See* Amy Harmon, *Racial Divide Found on Information Highway*, *N.Y. TIMES*, Apr. 17, 1998, at A1; *see also* BENTON FOUNDATION, *supra* note 2, at 3.

11. *See* Harmon, *supra* note 10, at A1 (discussing that Vanderbilt University study showed that, of home computer ownership among all incomes, 44.3% of Whites own home computers, whereas, only 29% of Blacks own home computers); Paul Leavitt, *FCC Re-vamps Program to Put Internet in Schools*, *USA TODAY*, Apr. 17, 1998, at 6A (quoting Leslie Miller) (stating that, based on data from Nielsen Media Research, among students ages 16-24, 73% of White students owned a home computer compared to only 32% of Black students).

II. LET'S TAKE STOCK OF WHERE WE ARE IN SO-CALLED "ADVANCED TECHNOLOGIES"¹²

The "epic boom, opulent for even this glittering edge of America,"¹³ known as Silicon Valley, glitters only for the rich. In Silicon Valley, parents *and* their children use computers. Access to computers is easily facilitated in this area. For example, "there is a shop down the street to sell you a computer, another to fix your computer, another to give you computer classes, [and] there are Kinko's everywhere."¹⁴ In East Palo Alto, a low-income community right in the middle of Silicon Valley, "there is none of that."¹⁵

Focus should be drawn to the lack of adequate telecommunications facilities, which make an area less attractive for businesses. Richard Krieg, executive director of the Institute for Metropolitan Affairs in Chicago, has been quoted as noting that while "[middle-class communities] are rapidly approaching the 'next cycle,' the technology of the previous cycle has already bypassed the inner city."¹⁶ While middle-class families acquire home computers, distressed low-income communities "have little exposure even to earlier generation tools such as laser scanners at supermarkets and

12. See, e.g., ROBERT LEE CHARTRAND & ROBERT C. KETCHAM, CARNEGIE COMM'N ON SCIENCE, TECH., AND GOV'T, OPPORTUNITIES FOR THE USE OF INFORMATION RESOURCES AND ADVANCED TECHNOLOGIES IN CONGRESS: A STUDY FOR THE JOINT COMMITTEE ON THE ORGANIZATION OF CONGRESS 10 (1993) (discussing study that evaluates Congress' advanced technology by providing an overview of information services currently used by Congress, identifying areas needing improvement, and recommending options that will enable Congress to adapt to changing requirements).

13. Quentin Hardy, *Hot Young Companies, New Millionaires Fuel Silicon Valley Boom*, WALL ST. J., Oct. 8, 1996, at A1 (stating that yuppie millionaires riding epic boom are transforming Silicon Valley).

14. BENTON FOUNDATION, *supra* note 2, at 2 (quoting Bart Decrem, director of Plugged In, a youth technology initiative located in California); see also John Gittelsohn, *Tale of Two Schools, Just Miles Apart*, ORANGE COUNTY REG., Apr. 23, 1997, at A6 (comparing performance scores and availability of resources at two California schools, Corona del Mar and Estancia High).

15. BENTON FOUNDATION, *supra* note 2, at 2; see also Gittelsohn, *supra* note 14, at A6.

16. BENTON FOUNDATION, *supra* note 2, at 2; see also Barbara Ruben, *Access Denied*, ENVTL. ACTION MAG., Sept. 22, 1995, at 18 (stating that information technology has created a disparity in computer literacy that favors whites and educated people). Fifty percent of homes headed by single women with children are without direct access to telephone service, and 21% of those living in public housing lack access. See *id.* In Chicago's lowest income areas, around 20% of homes are without phones. See Mary A. Johnson & Fran Spielman, *Daley: Ban Pay Phones from Private Property*, CHI. SUN TIMES, July 13, 1994, at 4 (reporting that Chicago's Mayor Daley's proposed ordinance would cause hardship to single family homes and renters who cannot afford phones, and to people who have emergencies).

bank automatic tellers.”¹⁷ This Article maintains, as does Krieg, that these gaps do not arise by choice of residents of low-income neighborhoods. Many organizations have studied patterns of telecommunications investment and found that all too often telephone and cable companies have moved quickly to wire wealthier suburbs with advanced systems, while poor, inner-city neighborhoods are not upgraded.¹⁸ In 1992, Bell Atlantic promised to connect every home and business in New Jersey with fiber optic cable.¹⁹ By 1997, Bell Atlantic had wired only the corporations and large suburban areas of New Jersey.²⁰

Advanced telephone and cable facilities support distanced communications. The physical proximity of customers has become far less critical to business growth. For example, the last wave of technology — e-mail, video conferencing, fax machines, and computer networks — have led to the migration of jobs away from metropolitan and suburban America.²¹ These technological advances have enabled “distributors and financial institutions like banks and insurance companies to consolidate operations and locate ‘back room’ facilities farther from their customers.”²² For example “28 of the largest counties in the Northeast and Midwest lost one million

17. BENTON FOUNDATION, *supra* note 2, at 2; *see also* Richard M. Krieg, *Signed Off: Information Apartheid Blocking Black Communities*, CHI. TRIB., Oct. 23, 1995, at 15 (discussing gap in computer and information availability in different Chicago communities).

18. *See* BENTON FOUNDATION, *supra* note 2, at 2; *see also* Dwight Silverman, *No Universal Agreement on 'Net*, HOUS. CHRON., July 5, 1996, at C1 (reporting that universal access to data networks is hotly debated); Keisha Anderson, *Getting the Message Straight*, BLACK ENTER., Feb. 1997, at 205, 206 (reporting that breakup of AT&T potentially harms African Americans, Asians, and Latinos because new smaller companies entering the market and offering inferior services, may target low-income families and foreigners who may not understand what they are paying for). *But see* Bruce Mohl, *Rising Demand for Service Rings Up Trouble for Nynex*, BOSTON GLOBE, Sept. 16, 1996, at A1 (reporting that Nynex is struggling to keep up with telecommunications demand not because of monopolistic arrogance, but unusually strong demand).

19. *See* Melody Petersen, *Trenton Tells Bell Atlantic to Speed Up Urban Cable Connections*, N.Y. TIMES, Apr. 22, 1997, at B8 [hereinafter Peterson, *Trenton Tells Bell Atlantic*] (discussing failure of Bell Atlantic to upgrade inner city lines); Melody Petersen, *Critics Say New Jersey Phone Plan Shuns Poor*, N.Y. TIMES, Apr. 17, 1997, at B1 [hereinafter Petersen, *Plan Shuns Poor*]; *see also* Raymond Fazzi, *Promises, Promises*, ASBURY PARK PRESS, Oct. 19, 1997, at B1, available in LEXIS, News Group File, All (reporting that many Bell Atlantic customers expressed disappointment because Bell Atlantic failed to deliver promised interactive television and other revolutionary features).

20. *See* Petersen, *Trenton Tells Bell Atlantic*, *supra* note 19, at B8; Petersen, *Plan Shuns Poor*, *supra* note 19, at B1.

21. *See* BENTON FOUNDATION, *supra* note 2, at 3 (discussing OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, THE TECHNOLOGICAL RESHAPING OF METROPOLITAN AMERICA (1995)).

22. *Id.*

jobs in the 1980s."²³

A national survey conducted by Coldwell Banker found that "[d]owntown office vacancies declined slightly during the third quarter of 1986, . . . [while n]ational suburban office vacancies, . . . [in identified cities or regions,] increased to 23.8 percent, an increase of 0.5 percent, to establish a new high, capping a two-year period of increasing vacancy."²⁴ According to Krieg, "Chicago alone has more than 2,000 unused manufacturing sites."²⁵ This migration of employers leaves the urban unskilled labor force with little chance of advancement.

Milton J. Little, Jr. Executive Vice President of the National Urban League stated: "We are witnessing the wholesale disappearance of work accessible to the urban poor."²⁶ Poor, rural communities already isolated do not have access to infrastructures, training, and access necessary to support advanced technology.²⁷ For example, in Appalachian Ohio and Mississippi, lines could only handle 2400 baud, which can be described as analogous to "watching paint dry" when attempting to "surf the 'Net."²⁸ Hence, the relocation of business from the city to outlying areas does little to improve conditions for the rural or urban poor.

Individuals, communities, and society at large suffer from the digital divide. Individuals will suffer and by the year 2000, sixty percent of jobs will require technological skills.²⁹ In the job market, this is already clear: "[b]etween 1979 and 1995 . . . real wages dropped 23 percent for people with less than a high school education . . . while wages rose 4 percent for college graduates and 12 percent for those with advanced degrees."³⁰

23. *Id.*

24. See Coldwell Banker National Survey Reveals Drop in Downtown Office Vacancies, Increase in Suburban Markets, BUS. WIRE, Oct. 20, 1986, available in LEXIS, News Group File, All.

25. BENTON FOUNDATION, *supra* note 2, at 3.

26. *Id.* at 4; see also Glenn Gamboa, *Study Shows Akron, Ohio, Has the Largest Wage Discrepancy in the State*, AKRON BEACON J., June 10, 1992, at 10, available in LEXIS, News Group File, All (discussing the lack of jobs opportunities in the city as major cause of wage discrepancy).

27. See BENTON FOUNDATION, *supra* note 2, at 4; see also OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, RURAL AMERICA AT THE CROSSROADS: NETWORKING FOR THE FUTURE 41-45 (1991) (describing current education, economic, and employment situation for rural communities). A 1996 study conducted by Harvard University confirmed that there is a world emerging composed of urban poor suffering from out-migration of opportunities for work advancement. The study refers to the work of William Julius Wilson, Professor of Sociology, *When Work Disappears: The World of the New Urban Poor* (1996).

28. Author's observation.

29. See Kennard, *supra* note 1, at 554.

30. BENTON FOUNDATION, *supra* note 2, at 4-5 (citing findings by the Economic Policy Institute, Washington, D.C.).

Traditionally, publicly-funded institutions such as schools and libraries help bridge gaps in access to books, periodicals, and other information resources.³¹ Unfortunately, “these institutions mirror the technology gap.”³² Schools in low-income and historically disadvantaged communities have fewer computers and modems than schools in wealthier districts.³³ For example, in 1996,

[s]chools with [African-American and Latino] enrollment greater than 90 percent had a student-to-computer ratio of 17 to 1, compared to the national average of 10 to 1. For computers with advanced graphics and interactive video capabilities, the discrepancies are even bigger. While 62 percent of schools in high-income areas had Internet access in 1995, just 31 percent of schools serving low-income populations had access³⁴

Simply being able to get access to a computer may present a formidable challenge if you live in the economically depressed portions of metropolitan Chicago.³⁵ Computer availability in public libraries mirrors this same disparity of access. Studying his own neighborhoods in Chicago, Richard Krieg has stated that “there is one computer for every 20,000 residents . . . while libraries in the city’s suburbs had one computer for every 13,000 residents.”³⁶

The role of e-mail in U.S. society has increasingly become the focus of research by organizations interested in assessing its impact on social stratification.³⁷ As Tora Bikson, of the Rand Corporation, has stated, it serves as “a means for accessing information, communicating and exchanging ideas, and participating in voluntary associations, civic organizations, (and) political activity. . . . If people are cut off from the means to participate in these kinds of activities, it really has a negative impact on society as a

31. *See id.* at 7.

32. *Id.*

33. *See id.*

34. *Id.* (discussing statistics, from two reports, relating to computer access in schools located in low-income communities).

35. *Id.* at 8.

36. *See* BENTON FOUNDATION, *supra* note 2, at 8 (predicting that differences would be greater if one could compare number of computers in libraries in Chicago’s low-income areas to those in suburbs).

37. *See* Shava Nerad, *The IRS, Community Networking, and Public Policy* (last modified Mar. 27, 2000) <http://www.isoc.org/inet99/proceedings/3g/3g_1.htm> (referring to Tora Bikson, co-author of RAND’s *Universal Access to E-mail: Feasibility and Societal Implication* which provides an overview of materials advocating universal e-mail); *see also* Jeff A. Taylor, *The Gray New World of Telecom*, INVESTOR’S BUS. DAILY, Feb. 13, 1996, at A1, available in LEXIS, News Groups File, All (“The risk that America is developing an ‘information apartheid’ has concerned some researchers. . . . [A] Rand Corp. study called for a national commitment to universal e-mail.”); Rory J. O’Connor, *Firm Proposes ‘Liberty, Justice and E-mail for All,’* ARIZ. REPUBLIC, Nov. 26, 1995, at D1.

whole.”³⁸

Community web sites, electronic bulletin boards, e-mail, and computer training are not capricious or luxurious consumer items like a second new car or a swimming pool, yet not all of us are able to afford or have a working knowledge of the World Wide Web. This lack of knowledge is disproportionate among African Americans and Latinos.³⁹ Again, race coupled with income presents a particularly dramatic lack of participation in electronic communities. “Some 58 percent of those who [were not] aware [of the Internet] had household incomes below \$25,000.”⁴⁰ Quality, affordable computers are often purchased at stores located in middle or upper-class neighborhoods or through mail-order advertising sales and specials.⁴¹ Then the challenge to obtain Internet service is presented when one cannot provide a credit card number against which to post charges for connectivity.⁴² Without a checking account or credit card, getting on-line at home is virtually impossible.⁴³

A. “I don’t want to be forced to pay for the interactive video games or movies-on-demand of my neighbor down the street.”⁴⁴

Federal programs, such as the Telecommunications Development Fund (TDF) which held nearly \$22 million as of March 1998, have been established to make loans to small businesses to promote competition and

38. Nerad, *supra* note 37 (quoting Tora Bikson’s study entitled *Universal Access to E-mail*); see also *Users Embracing E-mail, Standalone Fax, Voicemail*, COMPUTERWORLD, June 22, 1992, at 10; Tsumotu Yamaguchi & Yomiuri Shimbun, *Digital Divide May Polarize U.S. Society*, DAILY YOMIURI, Feb. 22, 2000, at 1, available in LEXIS, News Group File, All (providing a look at non-U.S. nationals’ perceptions of the digital divide in the United States).

39. See Alan Ficreis, *The Digital Divide*, DIGITAL BEAT, July, 1999 (visited July 28, 2000) <<http://www.benton.org/DigitalBeat/db070899.html>> (“Despite massive amounts of publicity, few people know what the World Wide Web is, how it can be accessed, and what kinds of information can be obtained by its use,” Theresa E. Anderson and Alan Melchior wrote in *Assessing Telecommunications Technology as a Tool for Urban Community Building*.”).

40. BENTON FOUNDATION, *supra* note 2, at 11-12 (reciting statistics based on a survey distributed and collected by Bellcore labs in 1996, and observing that those figures may understate problem).

41. See *id.* at 12 (discussing how computers “often must be bought all at once”).

42. See *id.*

43. See *id.*

44. See *Groups Demand Easy Access To Information Superhighway*, AM. MARKETPLACE, Jan. 13, 1994, available in LEXIS, News Group File, All (quoting Bradley Stillman, then legislative counsel for the Consumer Federation of America to the Wall Street Journal in 1994).

stimulate technology.⁴⁵ State regulatory commissions are also investing in small businesses. In the late 1980s, California's Public Utilities Commission created the Telecommunications Education Trust Fund, which targets low-income communities for technology initiatives. The California Fund was created from proceeds of a lawsuit in which PacBell signed up low-income residents for call-forwarding and other optional telephone features without their consent.⁴⁶

No attempt to spread information technology in low-income areas will survive, however, unless the effort is tied to the community's own goals and needs. Thoughtful inclusion of technology in community initiatives have proven successful because it creates a comfortable environment for the residents.⁴⁷ Pre-school, after-school, college readiness, adult education, and senior center programs work and should also be promoted.⁴⁸

III. THE GLOBAL NATURE OF DIGITAL DIVIDE

A quick examination of the countries that have Internet service available brings some additional perspective to the matter. Not all the countries located on the African continent have ISPs available.⁴⁹ But Liechtenstein, a

45. See Caron Carlson, *Telecom Development Fund Flounders*, WIRELESS WEEK, Mar. 2, 1998 (visited July 28, 2000) <<http://www.test.wirelessweek.com/news/Exclusives/ex132.html>>; see also *Telecommunications Development Fund Makes First Equity Investment* (last modified Feb. 10, 2000) <<http://www.tdfund.com/news.html>> (noting TDF, a venture capital firm that finances early stage telecommunications technology companies, received some criticism for remaining nascent with its funds). On March 14, 2000, TDF announced its first investment with Invertix, for \$2.9 million. See Telecommunications Development Fund, *Telecommunications Development Fund Makes First Equity Investment* (visited July 26, 2000) <<http://www.tdfund.com/news.html>>.

46. See BENTON FOUNDATION, *supra* note 2, at 19 (discussing state commission's order requiring Pacific Bell to pay \$16.5 million, plus another \$4.5 million in interest for finance and research programs).

47. See *id.* at 22 (finding that "once computers and network connections become available in an environment where people are comfortable, residents readily embrace it"); see also Krieg, *supra* note 17, at 15 (advocating free "access networks" to the Internet in community centers, Krieg states that "community groups can jointly plan, secure data, conference and conduct advocacy campaigns").

48. See BENTON FOUNDATION, *supra* note 2, at 22; see also Tariq K. Muhammed, *And Access for All*, BLACK ENTER., May 1996, at 41 (describing Plugged In, an organization in East Palo Alto, California that provides 30 computers to local residents to make Internet accessible). *But see* Rick Hepp, *Officials Delay Development of Chicago Internet Centers*, CHI. TRIB., Nov. 19, 1999, available in LEXIS, News Group File, All (referring to difficulties in rolling out the first 1000 "Web centers" for free community Internet access in Chicago).

49. See Mike Jensen, *Bridging the Gaps in Internet Development in Africa* (visited July 28, 2000) <<http://www.idrc.ca/ACACIA/studies/ir-gaps5.htm>> (providing statistics of a survey analyzing country conditions and project activities to determine countries of greatest

country situated between Austria and Switzerland, and seemingly no bigger than a strip mall, is a well-known tax haven⁵⁰ and certainly has Internet access.⁵¹ No doubt, the wired world is smaller than one would imagine by looking at a globe.⁵²

In 1993, the British government awarded the South Bristol Learning Network (a nonprofit organization dedicated to creating an information infrastructure) a \$1 million grant in order to train the 40,000 residents of South Bristol in information technologies.⁵³ These residents lost their jobs in the 1980s and received assistance from the public dole until the Network stepped in.⁵⁴ Since the training, residents of Bristol have been able to "crack the problem of unemployment."⁵⁵

Now why can't we do something like that? We are trying. The South Bristol Learning Network got the attention of President Clinton, who twice invited leaders of the Network to the White House to make presentations to his advisors.⁵⁶ The U.S. State Department has launched a program to assist other nations to develop a telecommunications infrastructure.⁵⁷ Both horizontal and vertical efforts to get the entire world wired are desirable for several reasons. First, the future of the market lies in the Internet. Bringing developing countries into the global community on the Internet will

need of Internet infrastructure).

50. See Oliver Poole, *Liechtenstein Safe In Times of Crisis*, S. CHINA MORNING POST, Feb. 25, 1998, at 6.

51. The principality of Liechtenstein was one of the first countries to make gambling over the Internet available to its 30,000 inhabitants. See Scott M. Montpas, Comment, *Gambling On-Line: For a Hundred Dollars, I Bet You Government Regulation Will Not Stop The Newest Form of Gambling*, 22 DAYTON L. REV. 163, 168 n.47 (1996) (noting Liechtenstein started international gambling on the Internet, called InterLotto); *Liechtenstein-Based Lottery Rolls Out On Internet*, REUTERS NEWS SERVICE (Oct. 3, 1995), reprinted in 141 CONG. REC. S17040 (daily ed. Nov. 14, 1995); Todd Copilevitz, *Betting on the Net*, DALLAS MORNING NEWS, Oct. 22, 1995, at A1, available in LEXIS, News Group File, All (explaining that Liechtenstein expects that internet players entering the country will play and thus are not subject to another government).

52. See Brian Knowlton, *Wired World Leaves Millions Out of Loop*, INT'L HERALD TRIB., Oct. 8, 1999, at 7, 1999, available in LEXIS, News Group File, All.

53. See Dorothy Walker, *Just the Job*, INDEP. (London), Nov. 18, 1996, at 10 available in LEXIS, News Group File, All (noting that the aim was to train people with technology skills in areas of high employment and low morale).

54. See Jenny Mill, *Spreading the Net*, GUARDIAN (London), Dec. 15, 1994, at 4, available in LEXIS, News Group File, All (reporting that the Network enabled residents to gain access to the Internet when they otherwise would not have had the opportunity).

55. *Id.*

56. See *id.* (assessing South Bristol as model for "telecommunications empowerment zones" being set up in United States).

57. See Jeri Clausung, *U.S. Program Takes Technology to Undeveloped Nations*, CYBERTIMES, Jan. 4, 2000, at *1.

serve to enhance international competition.⁵⁸ Second, the Internet has presented the "Third Industrial Revolution." Leaving states out of this knowledge-based revolution will perpetuate third-world dependency and perhaps create fourth and fifth worlds.⁵⁹ Lastly, political stability can be enhanced by allowing nationals of all states to interact freely, engaging in free-ranging discourse, sharing knowledge and cultures from diverse funds of experience and accomplishment. Although, some Communist governments claim that open access to the World Wide Web would lead to political destabilization,⁶⁰ in the face of economic instability, governments with more open political systems have been able to survive economic crises more nimbly.⁶¹ Political infighting discourages foreign investors. The elimination of foreign investment can further aggravate or instigate economic instability.⁶²

In a fully "networked global economy"⁶³ the power that is unleashed by information and communications technologies (ICT) removes geographic constraints. The "network" paradigm enables benefits to devolve to participants on a multilateral and synchronous basis. ICT enables developing countries to attain their full economic potential. It allows a panoply of work, education, and human capital opportunities to become available to any networked entrepreneur. The future is now; catching up to it will be the challenge of modern global citizens.

58. See Ron Chepesiuk, *Bringing the Internet to the Developing World*, AM. LIBR., Sept. 1998, at 55, 55-56 ("Many developing countries are adopting a competitive attitude . . .").

59. See Dionne Jackson-Miller, *Technology-G-15: Doing Business in Cyberspace*, INTER PRESS SERV., Feb. 17, 1999, available in News Goup File, All (commenting on Jamaica's expanding access to the Internet).

60. See Katie Hafner, *Common Ground Elusive as Technology Have-Nots Meet Haves*, N.Y. TIMES, July 8, 1999, at G8 (reporting that in Laos, the Communist government considers free flow of information on Web a destabilizing force).

61. As an example, the Asian economic crisis in 1997 and 1998 was easier on Thailand and the Philippines due, in part, to open democratic governments in these countries. See Carlyle A. Thayer, *Vietnam and the Crisis*, ASIaweek, Aug. 7, 1998, at 64. In contrast, Vietnam is still coping with the economic downturn of 1997, and continues to suffer political unrest. See *id.*

62. See *id.*

63. Managed by the World Bank and launched in 1995, *infoDev*, Information for Development Program, is dedicated to the construction of the global information infrastructure and has coined the phrase "fully networked economy." See generally WORLD BANK, INFODEV ANNUAL REPORT 1998 (providing an overview of *infoDev*'s operations, governance and finance). *infoDev* provides grants to projects aimed at achieving this goal. See *id.* at 12. Since its inception, *infoDev* has received approximately 291 proposals for funding, and maintained 34 active programs in 1998 projects. See *id.* at 3.

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