Comparative Analysis of Information Society Discourse and Public Policy Responses in the United States and Brazil

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Resumo

Nos últimos anos verifica-se uma divergência gradual no discurso sobre a sociedade da informação adotado pelos Estados Unidos e por outros países. Essa divergência está presente, por exemplo, nos diferentes resultados dos discursos no Brasil e nos Estados Unidos. Os Estados Unidos implementaram discurso, formas de financiamento e programas voltados para o acesso e atrelados às políticas de treinamento focadas na competência profissional. O Brasil desenvolveu um discurso mais complexo sobre o lugar da inclusão digital no contexto da inclusão social, com debates relativos a competências profissionais, cidadania e necessidade de investimento na educação básica. No Brasil e nos Estados Unidos, os discursos e a respostas são diferentes em vários aspectos centrais, o que inclui o foco sobre raça e saúde.

Palavras-chaves: sociedade da informação; inclusão digital; Brasil, Estados Unidos

Abstract

Over the last several years there has been a gradual divergence between the discourse involving information society in the United States and outside the United States. This divergence can be well illustrated in the context of the contrasting discourse developments in Brazil and the United States. The United States developed a discourse, funding and programs geared towards access, secondarily geared towards training with a clear focus on job skills. Brazil developed a more complex discourse about where digital inclusion fits within social inclusion, discussing job skills, citizenship, and a need for bolstering basic education. Brazil and US discourse and responses differed in several key aspects, including: the relative focus on race and health.

Keywords: *information society; digital inclusion; Brazil, the United States*

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Over the last several years there has been a gradual divergence between the discourse involving information society in the United States and outside the United States. This divergence can be well illustrated in the context of the contrasting discourse developments in Brazil and the United States. The United States focused this discussion on the potential economic stratification of society and the exclusion of the poor and minorities from an advanced information society.

The Brazilian discussion can be divided into two major waves. The first wave of the Brazilian discourse tended to prioritize creating an information society and preventing Brazilian society's potential exclusion from the global information society, through structured public policy responses, subsequent public sector technology and public infrastructure responses. The second wave of discourse development in Brazil, which parallels that of European and United Nations organizations, places both information society and digital divide discourses within the context of "social inclusion" (in Portuguese: *inclusão social*), which centralized responses around expanding the role of disadvantaged populations in the larger society.

The United States developed a discourse, funding and programs geared towards access, secondarily geared towards training with a clear focus on job skills. Brazil developed a more complex discourse about where digital inclusion fits within social inclusion, discussing job skills, citizenship, and a need for bolstering basic education. Brazil and US discourse and responses differed in several key aspects, including: the relative focus on race and health.

Information Society

The concept of a change from advanced industrial society to an information society has occupied both scholarship and policy in a number of countries since the 1980s. The principal claim, according to Daniel Bell and others, was the driving force of advanced societies like the United States was changing from industry to information. A more recent debate posits that the real change is toward societies focused on the creation of information, culture and other advanced digital products and services.

A major part of the evidence offered for this idea was that job creation and employment were shifting away from industry toward information, education, culture and creativity (Bell 1983; Porat, 1977). This focused attention of scholars and policy makers on the need for a more educated workforce with both access to and skills required for using advanced information technologies like computers and the internet. In the United States, this led policy-makers like Robert Reich (1992) to focus on the need to retrain and reorient the U.S. population so it would be competitive in a global economy where industrial jobs increasingly shifted toward lower wage economies elsewhere. Under Reich's influence, stemming from these kinds of analyses and policy implications, the Clinton government (1992-2000) began to examine the extent of the digital divide in a series of surveys published as "Falling through the Net," (see below) and prioritized a set of programs by different agencies to begin to expand access and training for computers and the internet.

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The issue of the implications for developing countries of the lack of communications infrastructure preceded the information society debate, per se. UNESCO debates, originally culminating in the MacBride Report (1980) examined the problems created for many countries by not having access to news media, television, etc. The World Bank, International Telecommunication Union and U.N. Development Program (UNDP) also began to examine the impacts at both individual and societal or economy-wide levels of not having access to telephones, starting in the 1980s. The internet was added as a concern in the late 1990s.

Analysis of the impacts of inadequate infrastructure and access to ICTs was greatly popularized by the work of Manuel Castells (2000). He showed that some regions, such as Africa, were in danger of being excluded from world economic growth because major firms felt they could not do business there for lack of ICT infrastructure. Such concerns grew in a variety of countries, such as Chile, which asked Castells to do a report on the country. Coupled with meetings by business leaders at the Davos Summits, which endorsed the identification of the digital divide as a serious global issue, this sort of intellectual and policy momentum lead eventually to the two World Summits on the Information Society, which initially focused on the global level digital divide.

However, as this chapter proposes to examine, there also began to be very large differences between the way digital divides and digital inclusion as a policy response were framed. As will be noted below, the USA tended to remain focused primarily on questions of access to ICTs, which seemed to improve by 2000, leading the Bush Administration to declare problem solved. The USA focused secondarily on training related to ICT skills for work and the particularly problems of getting broadband to remote rural areas, which remained a program area with some financial commitment for the Bush Administration. However, as will be shown below, other groups and nations, such as Brazil, began to frame the question of digital inclusion within a larger framework of social inclusion.

This chapter avoids the theoretical controversies of the relationship between information society and the development of capitalist society (Bell 1983, Castells 2000, Toffler 1980, Robins and Webster 2004), but instead focuses on the intersections and contrasts between the cases of the development of the information society and social inclusion discourses in the United States and Brazil.

The case of Brazil

The conceptual linkage between social inclusion and the information society discourse, with specific focus on the digital divide and digital inclusion, as evidenced in the public policy directives and resulting initiatives began as early as the late 1990s under the administration of Brazilian president Fernando Henrique Cardoso (1994-2000). The Cardoso government continued the efforts and momentum toward making information technology more widely available that was initiated in 1989 with the creation of the National Research Network(1) (RNP) and the introduction of the internet in Brazil, by supporting

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exploratory research and working groups to diagnose and implement digital inclusion strategies.

In 1997, The Information Society Working Group was charged with determining what would be necessary for the implementation of a Brazilian Information Society by means of updating Internet infrastructure networks and providing a national plan for the coordination and dissemination of advanced informatics and the extension of these to Brazilian citizenry. The resulting document, the *Livro Verde* (Green Book) (Takahashi, 2000), coordinated under the auspices of 150 academics, government officials and working groups, information technology professionals and members of civil society, envisioned a program based on global market competitiveness and social outreach. The objective of the Information Society Program as stated in the *Livro Verde* is to "integrate, coordinate and provide actions for the utilization of technologies of information and communication of form to contribute for social inclusion of all Brazilians in the new society and, at the same time, contribute so that the economy have conditions to compete in the world market." (Takahashi, 2000, pg 10.)

Responsible for the financing (3.4 billion reais from private sector and national treasury and regional governments) and execution of the program would be a partnership among government, the private sector and civil society and these entities would in partnership address the following working categories: The Market, Work and Opportunities, Universlization of Services for Citizenship, Education in the Information society, Content and Cultural Identity, Government available to all, Research and Development, Technology Keys and Applications (Takahashi, 2000, pg 10).

Shifting Governmental Policies

In 2000, Cardoso mandated in the Presidential Decree of April 3, 2000, that created an inter-ministerial exploratory working group to "propose policies, directives and norms (normas) related to the new forms of electronic interaction." This collaboration, formalized by the Portaria da Casa Civil nº 23 de 12 de maio de 2000, became The Working Group in Technology and Information (GTTI), which shared goals with the Ministry of Science's Science and Technology's Information Society Program, decided to concentrate efforts in the following three areas Universal Service (for telephony and internet), making government accessible to every citizen and establishing advanced infrastructure within the governmental agencies for telecommunications and internet. In October of 2000 a second decree mandated the establishment of The Executive Committee for Electronic Government (CEGE) which paved the way for the e-government initiatives, the current hallmark for digital inclusion policy of which notions of citizenship are a significant underpinning.

The Green Book (*Livro Verde*) was an attempt to provide solid guidelines to construct the Information Society in Brazil. It received the input from professionals from diverse areas, professors, business people, and civil society,

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as an attempt to identify the country's main weaknesses and strengths in several areas. Six areas were identified as critical:

- Science and technology – specifically, dissemination of scientific information and technology;

- Education – focusing on distance learning and digital libraries;

- Culture – preservation of local identities and use of ICTs to publicize them;

- Health – use of telemedicine and health care information;

- E-commerce – guarantee of a safe interface for e-commerce;

- Education for the information society – technology education and fostering of the digital culture.

The Green Book provided key guidelines for the formation of a macro-level public policy initiative that was serve a pivotal role in the development of a governing structure responsible for developing specific responses to Brazil's needs related to information society.

Despite the foresight and guidance provided in the Green Book, the most efficient means for deployment of the internet and benefits of the information society to the population remains controversial with an on-going examination of the role of both the national telecommunication regulatory authority (Anatel) and the nation's private telecommunications providers. A deregulation of the telecommunications sector increased the number of providers and lowered the cost of access, which has been falling (1998). There was an increase in free internet services; although there are some discussions surrounding the quality of service by those providers, which is often considered low. There have been efforts at telecommunications tariff reform to reduce per minute connection costs. There has also been a huge increase in public access telecenters across the country, funded by federal, state and local governments. The governments have been collecting telecommunications taxes for a universal service fund (FUST), see below.

The Brazilian government has continued to provide leadership in this area and has frequently partnered with private entities to develop initiatives such as the "computer for everyone" program where the government subsidizes low or no interest loans to purchase a computer or laptop for middle and low income families.

These initiatives began under the Cardoso government, but have accelerated since under the auspices of the Luis Inácio "Lula" da Silva government of the Workers' Party (Partido dos Trabalhadores-PT) who supported a reworked model of corporatist or syndicalist socialism. At this point Lula's administration made a very important implementation toward social/digital issues by implementing the Universalization of Telecommunications Service, (FUST). A major principle was the democratization of the internet access.

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The Fund for Universalization of Telecommunications Services (FUST)

As an important movement toward social/digital inclusion was the Fund for the Universalization of Telecommunications Services(2), FUST. It was proposed initially by the Worker's Party in 1997 and enacted through Law no. 9.998 on 17 August 2000 with the stated objectives of bringing telecommunications services to areas where it is not cost effective to outlay services normally. By FUST requirements, all telecommunications companies were obligated to give one percent of their revenues to the fund, which was overseen by Anatel.

After a prolonged legal battle involving Anatel and the major telecommunication companies in Brazil and a subsequent investigation by the *Tribunal de Contas da União* (TUC – the federal audit and oversight body affiliated with the legislative branch of the government), it was established that by 2005 approximately 3.6 billion *reais* had been accumulated in fees from the telecommunications providers. Additionally, the TUC investigation found that Anatel had yet to establish any guidelines on how the accumulated resources should be distributed in order to make progress towards the objective of providing universal service. The TUC declared that Anatel had 180 days to develop and deliver a plan with clear guidelines on how the resources from FUST were to be distributed. Since 2005, the rate of planning and implementation of FUST funded initiatives has increased exponentially with funds going towards: telecenters, telecommunications infrastructure, technology for the deaf and hard of hearing, and a variety of other projects.

The Brazilian Telecenter Movement

Telecenters for social development has been a widely adopted model in Brazil and is frequently framed as a "community connectivity initiative" that establishes connectivity to populations who are economically or geographically (as in the case of rural populations) incapable of acquiring ICT access individually (Boas et al, 2005, p.106). Telecenters generically are public spaces established in a rural or urban community that offer internet connectivity at no charge to the local community. (Seabra 2007; Spence 2007) Some telecenters and related community centers offer complimentary services that include providing digital literacy and/or employment training, space for community meetings, e-government services and other digital or informational services. Because telecenters are designed to provide shared, community connectivity experiences, they present, in theory, a viable solution to both social and economic development issues.

For this reason, global, international organizations and development banks such as USAID (Unites States Agency for International Development), ITU (International Telecommunications Union), the World Bank, and UNESCO have been highly influential in the promotion, policy formation and financial support of telecenter formation, development and sustainability in countries of the developing south. The ITU (2006) states that "access to information and knowledge is a prerequisite to achieving the Millennium Development Goals

(MDGs), and has the capacity to improve living standards for millions of people around the world," which has been instrumental in establishing, concretizing and democratizing global ICT policy (ITU 2006, p. 1).

According to a 2006 declaration by the Brazilian Ministry of Development, Industry and External Commerce (p. 58), "telecenters offer access to information […] and open a world knowledge and opportunity to the thousands of citizens who still do not possess the means to acquire a personal computer or access to the internet in their homes".

One example of a rapidly expanding telecenter project in Brazil is the São Paulo municipal e-government program, where telecenters have became the chosen medium with which to combat digital exclusion among the city's low income population. In 2003, according to an article put out by Beatriz Tibiriça, at the time general coordinator of São Paulo's e-government program, of the city's 10.5 million inhabitants, 1.8 million, about 17% percent of the population used the internet (cited in Lacerda, 2004). Closing the access gap among the least advantaged 87% percent was the primary concern.

The São Paulo Telecenter program has one fundamental principle - digital inclusion that aligns with concepts of citizenship and participation, which are both fomented by and are dependent upon the state. The state, defined in this case as the municipal government, bears the onus for the project's sustainability because it is viewed as the only entity that can address digital inclusion as a public policy in the most efficient manner possible through the development of partnerships with both non-profit and private groups in the area where the telecenters are to be established.

In order to guarantee the lowest overall project costs and to veer the project away from the market fluctuation involved in the private sector, the telecenters must be sustained, from the municipal government's perspective, by a democratic government that treats digital inclusion as public policy and social inclusion initiative that benefits the under-served in particular. Telecenter sites are selected based on areas that with the highest degree of "social exclusion" as defined and measured by the Human Development Indicator (IDH). Initially, spaces selected to house "direct telecenters" were already owned by the city and were constructed in partnership with private businesses (Governo Electronico pamphlet; Delgadillo, p. 33). However, the availability of such spaces was limited and the municipal government was faced with the possibility of bearing the brunt of having to secure funding partnerships with private corporations in order to expand the network.

In response to these challenges, a second, more viable and civil society oriented telecenter arrangement emerged, and the city began to solicit relationships among São Paulo's civil society organizations. As a result numerous "partnership telecenters" where the expenses where shared with the hosting organization were established. The partnering organization were responsible for all financial matters and up-keep related to the physical space, while the municipality maintained responsibility for providing the

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equipment, installation, proctor training and digital literacy instruction, in essence, everything pertaining to access and connectivity. Each month, the partnership telecenter received 1,000 reais (approximately US$500) from the municipal government to subsidize maintenance costs.

The city, partnered with RITS (Information Network for the Third Sector), a Latin American NGO, who provided proctors and technical training for employees selected from the community in which the telecenter was housed (Barbosa, 2003, p. 84), and the European Union donated 100 million euros in 2003 to support the expansion of digital literacy for telecenter users ("União Européia," 2003).

Telecenter Administration

The Electronic Government division of the Department of Communication and Social Information manages the telecenter program by creating teams to address the following areas: "maintenance and support, proctor training, software distribution and providing resources and infra-structure" (Barboza, 2003. p.85). Ten regional managers are appointed to supervise the facilities and to establish "contact swith other regional municipal departments at the sub-prefecture level" (Barboza, 2003. p. 85). Each telecenter has, in addition to the proctors, is provided with technical support.

Each telecenter's administration depends on community involvement. Each unit must have an administrative council made of community users. The administrative council is chosen from the initial plenary meeting early in the formation of the telecenter and the partnering civil society organization and participating members of the community present a plan to the city that will outline how the center operations and maintenance. Subsequently, a second plenary meeting is held to elect the volunteer administrative council that will serve as the "eyes and ears" of that particular telecenter community. (Somos Telecentros CD-Rom). The administrative council will undertake whatever action required to evaluate the services provided, provide feedback to the city, and initiating services deemed necessary to ensure facilities proper functioning.

The Telecenter Facilities and Offerings

Telecenters contain between ten and twenty networked computers with broadband connections. All services offered to users are free of charge, but each must register to use the facilities, which are open from 9a.m. to 6p.m., Monday through Saturday. The majority of the computers are reserved for digital inclusion courses lasting two hours each. Topics included but are not limited to the following: introduction to the internet, how to create blogs and webpages, graphic design and animation, word processing, spread sheets and even programming. Patrons must reserve computers for personal use ahead of time and are allowed 30 minutes per reservation. Users 7 years of age and older may are allowed access for personal use. Anyone 10 years and older may sign up to take any of the computer literacy courses and upon completion, participants earn merit certificates.

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In order to cut costs and in the spirit of democracy, GNU/LINUX Debian open source operating systems. Software used are Gnome, Open Writer, OpenCalc and Galeon which are graphic interface, word processor, spread sheet and Web navigation applications respectively. Using open source software is extremely cost effective as it eliminates licensing fees. Furth and he additional strategy of using /thin-client servers rather than "machine parks," dramatically reduces costs when compared to proprietary software. Thin client refers to "A network computer without a hard disk drive, which, in client/server applications, is designed to be especially small so that the bulk of the data processing occurs on the server" (National Center for Education Statistics, n.d.). According to Beatriz Tibiriça, general coordinator of the municipal e-government program, in order to install proprietary softwares for 80 telecenters, it would cost 5 million dollars per server, totaling 400 million dollars. The thin-client server allows a savings of $4.2 million in licensing fees for 80 telecenters with 20 computers each, not mentioning an additional $370 million savings in components. Using open source software in addition to thin-client architecture, therefore, saves $5 million. (Delgadillo, 2003, p.35)

The case of the United States

The United States has a first mover advantage when the idea of information society is considered because the infrastructure that is the basis for the so called network society was developed in this country, the internet and computers networks in general, among them. The idea of an Information Society, however in the US is a little bit different from what we can find in Brazil, which the deficiencies in terms of infrastructure and huge social inequalities prompt pro citizenship (in this case an approach more close to Europeans concept of the Information Society) and overcoming digital/social divides. In the US the term Information Society as appealing as cyberspace would be, and the tendency is to focus on a more pro market and pro business solutions rather than a government federal direct action.

In fact the idea of and Information Society in the US have its origins during the Clinton administration and the biggest promoter of this idea was the vice-president Al Gore. Gore was the "father" of the idea of an Information Superhighway in the United States and according to his vision providing the country with advanced information and communication infrastructure was essential for the coming of a new era for commerce, education and governance and would help maintain the leadership of America in a world of change. It is interesting that the idea of an Information Superhighway is essentially focused on technology itself.

The debate over the digital divide in the U.S. can be broadly separated into two groups—the advocates, or those supporting the idea of the digital divide as a pressing social issue, and the contrarians, those who deny the existence, or at least the importance, of information and communication technology (ICT) access as a national issue. However, neither of these perspectives should be seen as monolithic. As a national social and political issue, the digital

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divide is largely the product of the Clinton administration, which initially publicized the divide in terms of connectivity with the National Information Infrastructure (NII). With the support of the Administration, the NTIA under the Department of Commerce performed increasingly sophisticated studies on ICT access and usage.

While these studies have become more and more finely-grained, looking at issues of online behavior and attending to previously neglected groups, such as disabled internet users, the policy rhetoric surrounding the digital divide issue has shifted over time, increasingly assuming that the natural process of technology diffusion will adequately address any remaining inequalities. This increasing reliance on diffusion theory tends to blame those without access, so that people who have not adopted internet technologies are seen as voluntarily opting out. This discursive shift is evident in the reports generated by the NTIA, as well as in other policy discourse. Early NTIA analyses stress the dangers of an increasingly stratified society, divided by inequalities in access, situating the divide as an issue requiring active national policy. Later reports, however, reflect the ascendancy of contrarian rhetoric, articulating the digital divide as an issue to be addressed through market logic and natural diffusion.

Early Articulations of the Divide

The digital divide is a term that was popularized in the 1990s, as personal computing and then Internet use became more common among the upper and middle classes in the U.S. This was not the first articulation of a gap in information resources. Before digital technologies became common in the home and workplace, there were already concerns over information have and have-nots on both national and global levels.

One initiative that grew out of this concern with information technology was the National Information Infrastructure (NII), a plan for a public-private partnership to develop an information superhighway to benefit all Americans. Initially presented by Vice President Al Gore and Secretary of Commerce Ron Brown in 1993, the plan for the NII dealt primarily with private sector IT development, but emerged from a larger context of growing concern over the increased stratification and economic inefficiencies that could accompany technology diffusion. Because of this danger, policy discourse surrounding the NII assumed that the federal government would be actively involved in promoting public access, to ensure more even diffusion of technology access and services. Clinton Administration Secretary of Labor Robert Reich emphasized a focus on citizens, rather than corporations, in the development of a new information economy, criticizing the Reagan and Bush Administrations: "Policymakers have failed to understand that a nation's real technological assets are the capacities of its citizens to solve the complex problems of the future—which depend, in turn, on their experience in solving today's and yesterday's" (1991, 162).

Reich suggests that while in previous decades the health of the American economy could be linked directly to the success of American-owned

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corporations, by the 1980s, American citizens were no longer benefiting from government-subsidized technology advances. "[S]ubsidies now given to American corporations to develop new technologies have less and less bearing on what Americans learn to do" (159). Rather than focusing only on private enterprise, the US government must invest in the education of workers, helping them become technologically sophisticated and discouraging the development of an income gap.

Like information society theorist Manuel Castells, Reich finds that the adoption of emerging information technology can lead to increasing economic stratification, so that the wealthier classes benefit while the real wages of the working classes fall, due to lack of training and the tendency of American corporations to outsource labor to cheaper markets overseas (1997). Whereas Castells tends to define national wellbeing according to the success of the country's businesses on the global market, however, Reich focuses on the skills of the individual American. The national economic health is dependent not just upon the performance of corporations in the emerging "symbolic-analytic" fields, but upon the resources of the individual worker, who must be educated to successfully participate in the economy. The rhetoric is visible in discussions of the NII, a plan for the government to collaborate with private enterprise to improve national information networks and strengthen the economy while guarding against the creation of greater economic stratification.

Shortly after the announcement of the NII's Agenda for Action in 1993, Vice President Gore outlined the core principles of the plan. These included the encouragement of private investment, the promotion of competition, and the development of a flexible regulatory framework able to adapt to the continuously changing environment of high technology. But while the NII plan strongly emphasized the nurturing of private industry, it also acknowledged the need for universal service and open access. Warning of "electronic redlining," Gore stated "If we allow the information superhighway to bypass the less fortunate sectors of our society - even for an interim period -- we will find that the information rich will get richer while the information poor get poorer with no guarantee that everyone will be on the network at some future date" (1993). The provision of universal service is positioned as a necessity for the success of the NII and a needed protection against the dangers of unequal technology diffusion.

Deregulated markets and competition are encouraged, but the market is not adequate to ensure the diffusion of new information technologies. The nation "cannot relax restrictions from legislation and judicial decisions without strong commitments and safeguards that there will be a "public right of way" on the information highway" (Gore, 1993). Protecting the interests of the public sector was articulated as a key factor in the development of the NII, including the connection of all classrooms, libraries, hospitals, and clinics to the national network by 2000--a frequently-cited goal of the Clinton Administration (NII White Paper).

The NII called for the NTIA to perform annual studies of the availability of advanced telecommunication services. This resulted in a series of NTIA

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reports produced under the Department of Commerce. These focused on the measurement of a digital divide developing along multiple axes including income, race, gender, geography, and education. Early articulations of the digital divide concentrate primarily on gaps in computer access and ownership. In the NTIA's first major report, "Falling Through the Net: A Survey of the 'Have-Nots' in Rural and Urban America," internet access was not yet considered a vital issue—instead, this first report of the NTIA series looks at phone and computer penetration across America, drawing upon data from the Current Population Survey of the Census Bureau.

The NTIA's "Falling Through the Net" report describes a variety of gaps in ICT access, from basic telephone service to personal computing. Although the study also looks at the number of households with a computer modem, internet access became a more central focus in later NTIA studies. The report enumerates vital factors affecting Americans' phone and computer access, finding that the least connected included poor and young households in rural areas and in central cities, elderly residents, and those with the least education, especially in central cities. This emphasis on central cities, decaying areas of high urban concentration, recalls Manuel Castells' discussion of network and capital flows and the potential for increased stratification along geographic and economic lines. While network nodes are often geographically situated near urban areas, infrastructure often skips depressed economic areas in the inner cities, leaving them to languish, marginalized and outside the flows of capital and power – another example of the uneven diffusion of technology and its economic benefits (Castells, The End of the Millennium, 2001).

In conclusion, the initial NTIA report calls for more finely-grained research on ICT users, so that "carefully targeted support programs can be implemented that will assure the high probability that those who need assistance in connecting to the NII will be able to do so" ("Falling Through the Net," 1995). The study cites public schools, libraries, and other community access centers as likely sites for the promotion of connectivity, rejecting the assumption that diffusion and falling technology costs will naturally solve inequalities in access. Solutions to the information gaps are described in terms of "public safety nets," a phrase used by Gore in his description of the universal service component of the NII.

Echoing Reich, Department of Commerce Assistant Secretary Larry Irving, who was centrally involved in the production of these NTIA reports, framed the need for increased access and education in terms of national economic success. Citing 190,000 unfilled high-technology oriented US jobs in 1997, Irving suggests that access and education are critical to maintaining the nation's globally competitive status. "The demands of the new information economy are stretching our human resources. For instance, we simply do not have enough computer and technology-literate Americans to meet the needs of our nation's businesses" (Irving 1997). Like Reich, Irving notes the overseas outsourcing of technology jobs, framing this issue in terms of the need for access and training. Were Americans to become more skilled in the high

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technology workplace, companies would have less need to outsource jobs to other countries with more tech-savvy workforces. Thus, the danger of unequal technology access continues to be framed as a matter of the nation's global economic power.

The next NTIA study, in 1998, helped popularize the term "digital divide," and the third major report, "Falling Through the Net: Defining the Digital Divide," released in 1999, described the divide as becoming a "racial ravine." Although penetration rates of computers and the internet had risen across geographic regions and demographic groups, the data of the 1999 study suggested that certain gaps were growing, especially in terms of race and ethnic origin. While already connected groups, such as white, more educated households, were rapidly adopting computer and internet technologies, historically less well-connected groups, such as racial minorities, were more gradual in their adoption. Moreover, the NTIA found that this "racial ravine" was manifesting regardless of household income: "Even when holding income constant, there is still a yawning divide among different races and origins" (Falling Through the Net, 1999). At the same time, education and income, characteristics that also vary along racial lines, were also significant factors; because of this, the report suggests that minorities in the U.S. will face a greater digital divide in the future.

While the 1999 NTIA study found changes in access and usage patterns, it also reflected a discursive shift, focusing on the importance of ICT access in economic terms, and suggesting that "while these items [phone, computer and internet access] may not be necessary for survival, arguably in today's emerging digital economy they are necessary for success" (Falling Through the Net, 1999). Whereas earlier analyses focused more on a general goal of connectivity, this 1999 report frames this connectivity in terms of encouraging the national economy – Americans need ICT access for work and for consumption, such as e-commerce.

The report also cites pro-competitive policies as the reason behind the "surging use" of computers and the internet, implying that deregulation strategies, such as those embodied in the 1996 Telecommunication Act, are responsible for the gains in adoption. Although the study suggests that universal service policies for telephony must continue to be supported, the driving factor in ICT adoption is increasingly framed in terms of deregulated markets, rather than direct government intervention. "These findings suggest that further competition and price reductions will be vital to making information tools affordable for most Americans. Going forward, it will be important to promote policies that directly enhance competition among companies manufacturing computers and other internet devices, as well as among internet service providers"(Falling Through the Net, 1999).

Although pro-competitive policies are credited with the reported advances in penetration rates, the NTIA also addresses the need for community access centers (CACs), while arguing that the natural process of technological

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diffusion is not enough to solve inequalities in access. While groups such as the Heritage Foundation were already arguing that advanced ICTs would diffuse to the American public, eventually transcending educational, racial, and economic boundaries, the 1999 NTIA report suggests that depending upon the market for diffusion is not a wise course of action. "Given the great advantages accruing to those who have access, it is not economically or socially prudent to idly await the day when most, if not all, homes can claim connectivity" (Falling Through the Net, 1999). Thus, this third report supports the rising climate of competition, but continues support for certain government interventions, such as the CAC, as a "short-term answer" to existing inequalities of access. Technology education and access are framed as gateways for Americans to find success in the workplace, and for the growth of business, which requires a knowledgeable workforce.

Referring to the gap between "haves" and "have-nots" as "one of the critical economic and civil rights issue of this decade," Assistant Secretary Irving expressed concern that many workers would be excluded from the emerging information economy, underscoring the continuing need for active policy (Irving, 1999).

As discourses of deregulation became more dominant and faith in market logic rose, however, this assumption of government involvement become less tenable; the Bush administration's later attempts to dismantle government programs addressing the digital divide are firmly situated within the rhetoric of market-led diffusion, frequently invoking reduced hardware prices as evidence against the need for continued government involvement in promoting public access.

Disputing the Divide

The last few years have been a turbulent period for federal programs designed to address the digital divide. A flurry of conflicting claims about this issue erupted in the months preceding the presidential election of 2000, including numerous denials by conservative policy groups such as the Heritage Foundation that a divide even existed. By the early months of 2002, the Bush administration was preparing to cut key programs designed to address digital divide inequalities, including the Technology Opportunities Program (TOP) of the Commerce Department. The administration justified these actions by strategically interpreting new reports on information technology gaps, such as the National Telecommunications and Information Administration's (NTIA) report, "A Nation Online," released in February 2002. It is also important to contextualize the Bush administration's actions within the larger atmosphere of deregulation and the growing assumptions that the free market and natural processes of diffusion would ameliorate any residual inequalities in technology and information access.

Discourses disputing the digital divide were already dramatically building during the months leading up to the 2000 presidential election. Contrarian discourses generally put their trust in the logic of the free market, assuming

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that the technologies in question will naturally diffuse to different segments of the population over time. Because of this faith in market-led diffusion, contrarians generally oppose direct government involvement—one of the classic targets is the government-mandated universal access cross-subsidy, which contrarians argue inhibits more players from entering the market (Compaine and Weinraub, 1997). An article distributed by the Heritage Foundation in February 2000 warns that federally-based programs will serve to further entrench bureaucratic government interests, an increasingly popular scapegoat for weaknesses in the U.S. economy (Thierer and VanHelmond, Heritage Foundation, 2000).

Another prominent argument against government intervention is that of technological advancements. Certain policy analysts argue that government-assisted adoption of ICTs will risk the institutionalization of soon-to-be archaic technologies. As Compaine has argued since the 1980s, "jumping in too fast can lock in a technology that soon would be superseded by a better one" (2001). Other concerns include the unnatural overloading of the information infrastructure, and the argument that those who are on the wrong side of the divide may have deliberately chosen to pass up access to these emerging ICTs. Finally, an increasingly prominent argument concerns the actual existence of a digital divide. Whereas contrarian positions during the 1990s often acknowledged that a divide existed, while arguing against government intervention, more recent contrarian discussions suggest that if any divide did exist, it has now been solved through pro-competitive policies and decreasing technology prices.

The internet and the computers that link to it are often framed as merely the next generation of mass media entertainment technologies; thus, there is no compelling public interest in addressing gaps in access and usage abilities. Recent ICTs are often compared with a variety of other technologies, especially the television, implying that internet and computer access will follow a diffusion process similar to that of the television. Adam Clayton Powell suggests that television was initially a rare technology, but spread rapidly without government involvement, arguing "there is no debate about the television-rich and television-poor in America today" (Powell, Reason, 2000).

Compaine uses similar reasoning, comparing the cost of internet access to the cost of other media. Tracing the decreasing real costs of black and white television from the early 1950s to 1980, he argues that internet access and computer technology will follow a similar pattern, eventually allowing for near-universal diffusion (Compaine, The Digital Divide: Facing a Crisis or Creating a Myth? 318). The Heritage Foundation, citing Thierer, supports this perspective, suggesting that because television penetration is now at 99% generally, and at 97% among poor households, there is no reason to give low income families tax credits or other incentives to invest in computer and internet technology. The market is situated in these arguments as a fair arbiter, one that will allow advanced communication technologies to trickle down through the strata of society, given time.

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While television is a popular site of comparison in this paradigm, contrarians also point to other examples of technological diffusion, generally arguing that it is natural and perhaps even American that technologies diffuse unevenly. Thierer argues, "while it is true that the spread of the internet has not been perfectly uniform, there is nothing unusual or inherently unfair about the way services are being delivered"("A 'Digital Divide' or a Digital Deluge of Opportunity?" February, 2000). The diffusion of new technologies to "Home Town America" has never been uniform, but disparities have always existed among different groups' financial and geographical resources—this, however, "does not mean there is a national crisis that requires federal intervention" (Thierer, 2000). Instead, Thierer suggests that the federal government would do best to remove "burdensome regulations and taxes that inhibit the private sector," allowing commercial enterprise to more efficiently serve the needs of the U.S. population.

These calls for further deregulation fit into a larger rubric of faith in the free market. Contrarians cite various ways that the private sector has already addressed the digital divide, such as through falling computer prices, free, advertising-supported internet services, and new internet appliances that cost much less than traditional computer systems. Commercial ventures are described as solving the digital divide through competition and natural pursuit of profit; at this point, decisions to not purchase a computer or get internet service are positioned as being voluntary, and based of the personal preferences of potential consumers. This conclusion is also significant because it frames non-adopters as individuals making independent decisions, rather than as members of traditionally underprivileged groups working within a larger structural framework. If a family chooses to purchase a television rather than a similarly-priced computer system, they are simply making a consumer's choice.

There have been a variety of theoretical and empirical responses to the claims of digital divide contrarians. Hammond stresses the seriousness of gaps in access, arguing, as the networks and the equipment attached to them become the preferred mode of political participation, lifelong learning, employment and commerce, as well as personal expression, non-access and non-connection could become tantamount to "nonexistence" (Federal Communications Law Journal, 1997)

Lack of access to the internet is not only a matter of lacking access to entertainment and email, it is a matter of lacking possibility. Reich's arguments from fifteen years ago continue to resonate, as technology access and education affect Americans' potentials as participants in the economy. Recent research has demonstrated that inequalities occur not just in basic access, but in bandwidth quality and according to geographic location. Edwin Parker, studying the impact of the digital divide on rural America, theorizes the divide as applying to more than just basic access, specifically addressing the uneven spread of broadband services in urban and rural areas. Because private companies are reluctant to build out infrastructure to less-concentrated communities, Parker suggests rural areas are endangered economically: "[A]s

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the global economy converts to a highly interconnected information-intensive economy, communities left off the new broad-band network will inevitably suffer economic decline" (Telecommunications Policy, May 2000). To address this issue, Parker suggests the removal of regulatory barriers, but also direct government involvement—if local government bodies act an "anchor tenants" for dedicated broadband networks, then these services can be shared, extending to the entire local rural community.

Jorge Schment and Scott Forbes similarly focus on local conditions, suggesting that future studies of gaps in ICT access must go beyond data at a national level to include state and county-specific information, accounting for the ways in which regions can differ in conditions, and thus producing more effective policy (The Information Society, 2000). Schment and Forbes also respond to certain assumptions made about the digital divide, specifically discussing the issue of fixed-cost technologies (TVs, PCs) versus technologies with monthly fees, such as phone and internet services. The authors argue that the gap in PC ownership is likely to eventually close, due to the rapid diffusion facilitated by fixed-cost commodities.

Because PCs and TVs are associated with a one-time-only cost, they can readily circulate in the second-hand markets, and even new, are more predictable as liabilities. Monthly fees, on the other hand, require choices to be made each month and are thus less willingly adopted by low-income consumers. Schment and Forbes are skeptical of the contrarian argument of eventual saturation, and supporting an expanded definition of universal services to include telephone, computer, and internet access in the home, suggesting that without this, gaps will persist. Lievrouw likewise acknowledges the importance of locally-oriented policy, suggesting that universal service may involve both the growth of individual capacity as well as institutional and system development. This notion of individual capacity refers to a user's ability to actively use information technologies; if the user is unable to use these resources or feels that they are not relevant, then *availability* of internet technologies will never translate into *accessibility*.

Pippa Norris phrases this in terms of *human capital*. Without investment in education, training, and lifelong learning, internet access cannot be meaningful (Norris, Digital Divide, 58-9). Norris also argues against the technological diffusion argument of the contrarians, referring to this as normalization theory, which predicts that among developed societies with competitive technological marketplaces, internet access will eventually reach over 90% of the populations. She contrasts this with Everett Rogers' diffusion theory, which she finds suggests the continuation of social stratifications, as the adoption of new technologies reinforce existing economic advantages (Norris, 70-1). Contextualizing internet access within societies with existing economic stratifications, Norris suggests that social inequalities are too endemic to be adequately addressed by current policy strategies.

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Recent Shifts in Discourse

During the last Presidential election, there was a significant rise in discourse on the divide. Clinton's budgetary and rhetorical focus on the digital divide was used by contrarians as evidence of the Clinton/Gore propensity for "big government," and intrusive federal intervention. Programs such as TOP, the Technology Opportunities Program, were cited as pork-barrelling strategies for the administration to funnel money to Silicon Valley supporters (Thierer and VanHelmond, February, 2000). Since the Bush administration has taken over, this shift towards criticism of the digital divide issue has further manifested in the most current NTIA report, as well as in a recent study by the Pew Foundation.

The fourth NTIA report, released just prior to the election in October 2000, breaks with the paradigm of the digital divide. Although the report retained the title "Falling Through the Net," its subtitle is "Toward Digital Inclusion," shifting the focus from gaps to gains. The study mentions the share of households with internet access "soaring," and emphasizes that over half of American households possess PCs. Despite acknowledging that gaps continue to exist, the rhetorical focus of the report shifts dramatically, claiming that "the rapid uptake of new technologies is occurring among most groups of Americans, regardless of income, education, race or ethnicity, location, age, or gender, suggesting that digital inclusion is a realizable goal" (NTIA, 2000, 15).

This description does not mention the growing gaps among racial groups, discussed farther along in the report (NTIA, 2000, 37). In February 2002, the NTIA released its most recent report, with a wholly new title – "A Nation Online: How Americans Are Expanding Their Use of the internet." Again, this report emphasizes the gains made in computer and internet use, suggesting that "more than half the nation is now online," a phrase that was quickly deployed by members of the Bush administration to propose the dismantling of Clinton-era digital divide programs. Similar to the contrarian discourse, this most recent report cites declining prices and increased competitions as primary reasons to expect further adoption among traditionally disadvantaged groups. Significantly, after this report was released Secretary of Commerce Donald Evans stated, "With the expansion of the internet and related technologies into all sectors of our society, the administration believes subsidies are no longer justified to prove the usefulness of such technologies" (Evans, cited in The Boston Globe, "President Shrugs at the Digital Divide" July 17, 2002).

While advocates such as the Benton Foundation continue to point out that gaps in internet access still exist despite overall increases in usage, the current rhetoric clearly reflects the prevailing political climate. As Robert Horwitz pointed out in *The Irony of Regulatory Reform*, communications policy shifts are not neutral but are fueled by political interests. While the contrarian discourses discussed here developed out of the deregulatory climate prevalent in the 1980s and 1990s, they did not fully take hold until the shift in Presidential administrations. It is informative to observe the way in which

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this rhetorical strategies developed, eventually shaping national policy – will the discourse surrounding the divide shift stabilize in this contrarian position, or will it continue to change according to the political environment?

Comparisions between Brazil and the United States

In comparing the development of information society discourse and resulting responses, it is evident that the term "information society" is not as appealing in Brazil as it is in the U.S. The U.S. approach seems to be more technological determinist and business oriented, than the Brazilian approach, where discourse revolves around citizenship, local development, and social justice. Such difference is reflected in their regulatory frameworks, which in the U.S. is more pro-market, and in Brazil more centered in public intervention when needed, and public-private partnerships.

The U.S. advantage in infrastructure for the information society is evident, but Brazil is catching up and is undoubtedly the leading country in terms of number of ICT initiatives in South America. However, in terms of education, both nations' programs seem to focus on e-literacy. In both countries, citizens are not regarded, and should not be prepared as, mere technology users, but as technology creators.

In regard to universal access the trend in Brazil is to consider internet access as a universal service matter, but practically to focus on the development of telecenters, although the FUST program is now beginning to use its large resources to explore other solutions as well. In the U.S., universal service efforts for the internet concentrate in the diffusion of broadband in public schools, libraries, and rural areas.

Finally the discourse surrounding the digital divide in Brazil reflects the country's social exclusion and class divisions. Politicians, civil society, and businesses are unanimous in recognizing ICTs as tools that can minimize inequalities and enhance citizenship. In the U.S., the situation is diverse, and whenever the digital divide is accepted as a reality, it is generally linked to minority's access, or to a rural/urban divide, but never to class issues.

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