

The Virtual Workspace: Telework, Disabilities and Public Policy

Presented at ECEG 2005: The 5th European Conference on e-Government
University of Antwerp, Belgium
16-17 June 2005

**Paul M.A. Baker, Ph.D., Workplace RERC and Wireless RERC/GCATT, Georgia
Institute of Technology, Atlanta, Georgia [paul.baker@gcatt.gatech.edu]**

**Alea Fairchild, Vesalius College and Vrije Universiteit Brussel
[alea.fairchild@vub.ac.be]**

Abstract

Although policymakers are beginning to recognize that the use of ICTs can be used to help create reasonable workplace accommodation for people with disabilities, focused, comprehensive programs targeted at advancing these applications of ICT have yet to be developed. This paper provides an overview and a philosophical comparison of both the U.S. and European policies on telework for people with disabilities.

Keywords: disability, telework, ICT, universal access

1.0 Telework, "Workspace," and Accessibility

The widespread deployment of Information and Communications Technologies (ICTs), and implementation of E-accessibility initiatives in private as well as public sector institutions has resulted in increased efficiencies in the delivery of services, new kinds of online transactions, and alternative avenues of communication. These technologies have facilitated the development of new kinds of "spaces" for interaction. These range from virtual communities of interest where participants can engage with each other without being entirely captives of geography, to online forums where citizens can more conveniently engage in the policymaking process, to virtual workspaces that allow teleworkers access to information resources, e-collaboration, and online group activities.

Not surprisingly, noteworthy improvement in the interactions between citizens and the government has resulted, although significant portions of the population have been bypassed in the process. Much of the focus of the technological discourse (in the US at least) assumes that patchy use of ICTs is a function primarily of socioeconomic variables. Consequently, a key group of stakeholders has been overlooked, one with functional limitations that go beyond relatively remediable conditions (i.e. economic, educational, locational): people with disabilities.

Teleworking, in this case, a kind of accommodation, can be thought of as an avenue to address the idea that each person's disability is in many senses, unique. Unfortunately the downside of virtual workspaces is the possible resultant marginalization and stigmatization people with disabilities; moreover, it may act to decrease (or at least alter) the kinds of social networks that disabled people have within their occupations. In turn, if social/workplace contacts are limited then people with disabilities operate at a disadvantage within the work environment.

This paper addresses a specific, and generally overlooked, aspect of the "Digital Divide" and discusses the use of Telework (ICTs) as a reasonable workplace accommodation¹, as well as

¹ The term "reasonable accommodation" is commonly used in the United States, and in terms of employment is found in Title I of the Americans with Disabilities Act of 1990 (the "ADA"). The ADA requires an employer to provide reasonable accommodation to qualified individuals with disabilities who are employees or applicants for employment, unless to do so would cause undue hardship. "In general, an accommodation is any change in the work environment or in the way things are

providing increased access to governmental services relevant to occupational needs. We identify positive as well as suboptimal implementations of Telework and virtual workspaces and conclude, from our cross-national comparison, with some suggested Telework related policy initiatives and areas that may merit further investigation.

2.0 Theories of Teleworking/Disabilities

2.1 People with Disabilities – Employment and the Workplace

The U.S. Equal Employment Opportunity Commission's (EEOC) recognition that telework represents an important option in the provision of reasonable accommodations for persons with disabilities under the Americans with Disabilities Act of 1990, sends a strong signal of the government's viewpoint on employment of persons with disabilities (Anderson, et. al. 2001). In the US, approximately 44% of 16 to 64 year old persons with disabilities remain unemployed (U.S. Census 2000); societal costs for unemployed persons with disabilities range from \$78 billion to \$200 billion annually (Worksupports.com 2000). As an alternative work arrangement, telework shifts the workplace from the cubicle in a corporate office, for instance, to a remote space—a workplace at the employee's home, a satellite location. A key component of President Bush's 2001 *New Freedom Initiative* (NFI) focuses on the integration of Americans with disabilities into the workforce (Title IV (Part A: Promoting Telework), noting that "Computer technology and the Internet have tremendous potential to broaden the lives and increase the independence of people with disabilities. Nearly half of people with disabilities say the Internet has significantly improved their quality of life, compared to 27 percent of people without disabilities." A policy objective of the New Freedom Initiative is to expand the avenue of teleworking, so that individuals with mobility impairments can work from their homes if they choose." A follow-up report notes that "Telework is continuing to gain in popularity in both the private and public sectors," and that "President Bush believes that the ability to telework increases available employment options for individuals with disabilities, and his New Freedom Initiative directs that activities be undertaken to promote the expansion of telework options" (Whitehouse, 2004).²

In Europe, the European Commission has adopted a very broad definition of telework: "*the use of computers and telecommunications to change the accepted geography of work*", which could include people working in telecentres, in multi-site teams, as mobile workers on the road and in many other ways, as well as home-based teleworkers. Further, it is clear that people with disabilities do have a substantial place in the workforce based on sheer volume. The lowest estimate, based on the extremes of currently defined disablement categories³, puts their total number at approximately 40 Million people (nearly 11% of the population of the EU⁴). However, limitations of certain surveys done at national level in the European Union (EU) have investigated only "employed people who work at home more than three days a week in an organised telework programme managed and supported by their employer". This very narrow definition does not capture the many employed people who telework at home through informal agreement with their manager in the absence of a company scheme, and those who work at home regularly but less than three days a week, as well as the many self-employed people who use technology to deliver services to their customers and regard themselves as teleworkers (ETO 2000).

Policymakers at both the nation state and EU levels have viewed teleworking as a tool towards achieving a number of goals, including environmental schemes (most prominently in the USA) and the creation and modernization of jobs (a preoccupation of the European Commission). Because of this,

customarily done that enables an individual with a disability to enjoy equal employment opportunities." EEOC
[<http://www.eeoc.gov/policy/docs/accommodation.html>]

² These include establishing the Access to Telework Fund program which allows individuals with disabilities to work from home or from other remote sites away from the office, directing the Departments of Labor, Health and Human Services, and Veterans Affairs are conducting a two-year study to evaluate the extent and manner in which various home-based telework/telecommuting arrangements, including call center and medical transcription services, can enhance the employment of people with disabilities, production of material promoting the use of telework.

³ <http://www.un.org/esa/socdev/enable/dpb19992c.htm>

⁴ Source: Eurostat, see: <http://europa.eu.int/comm/eurostat/Public/datashop/printproduct/EN?catalogue=Eurostat&product=3-11012002-EN-AP-EN&mode=download>

there has been strong demand for statistics on the current, forecasted and potential spread of this form of working. In almost every European country national surveys have been conducted and statistics on the number of teleworkers published (see www.eto.org.uk for an overview). In some countries like the United Kingdom, the official labor force survey now includes a module on teleworking from home (ONS 2001). However, it is difficult to compare the results of these national studies because of strong differences in definitions, composition of samples and projection methods used (Gareis 2002). This includes the metrics of use by people with disabilities.

2.2 Telework: Not Just “Phoning In”

For people with disabilities, particularly with certain physical conditions that constrained transportations and ordinary interactions workplace interactions, the untethering of “work” from the proximate physical workplace offers employment possibilities which might be otherwise costly economically, or in terms of simple ease of movement or comfort.

Critics have generally focused on two features of telework: the remote aspect of telework — the lack of work support, job structure, technology, social interaction and communication, and also the potential liabilities of telework. Concerns have also been expressed about the costs associated with setting up teleworkers – for example, equipment and remote communication access, and determining who pays for what aspects of the telework ICT infrastructure. Employers fear the inability to secure proprietary information in remote telework locations, reductions in teamwork due to little face-to-face contact between employee members, remote management problems such as not being able to see employees in order to believe that work is being done. Finally there are concerns about disruption that might impact a wider sphere than just the employee, and result in home disruptions to family and neighbors which in turn could result in distractions and decreased productivity. This is a concern of not only employers but also employee. According to Mills, “... the traditional styles of management [monitoring employees] often do not work with telecommuting” (Mills et. al. 2001). In telework arrangements, managers must transition to a manager of employee performance or facilitator (Gibson et. al. 2002; Swink 2001; Mills et. al. 2001). Other than security which is an ongoing issue generally, these concerns are relatively unfounded.⁵

Employees fear long work hours, potentially becoming “workaholics” because of the lack of discipline, or experience self-managing flow of work. Isolation from the mainstream or from the background flow of office “information” might result resulting in limited career development (Khaifa and Davidson 2000; and Mills et. al. 2001). While telework is regularly offered as a partial solution to urban traffic and air quality issues, critics, paradoxically, have suggested that telework arrangements will result in increased urban sprawl, fewer jobs in public services such as transportation due to teleworkers being isolated to neighborhoods (Swink 2001; Mills et. al. 2001). The recent (2005) increase in gasoline prices has tended to alter the dynamics of the equation in this case.

In the U.S., surveys indicate that around 2.8 million employees telework regularly, and that approximately 17% of Americans teleworked full-time while 30% teleworked at least one day a week. (U.S. DOL) Some 45% of Teleworkers with a separate office in the home perceive an improved quality of life—work, home and social—as a result of the telework arrangement (Khaifa and Davidson 2000; Raines et. al. 2001; Gibson et. al. 2002). Advantages of telework as an alternative work arrangement include environmental improvements resulting from reduced commutes to the workplace, and the dispersion of the workforce in light of natural or human-made disasters. Other employer-related benefits of telework arrangements can include improved morale, expected reduced real estate cost and increased employee loyalty. Teleworkers express other advantages of teleworking as having a more flexible schedules, reduced employee expenses—clothes, vehicle fuel and the avoidance of commuting to and from the traditional office (Gibson et. al. 2002).

2.3 Teleworkers with Disabilities: Social, Cultural and Policy Considerations

⁵ See for instance “CDW-G Federal Telework Update 2005, Telework: This Time it's Real,” April 2005. [<http://www.cdwg.com/webcontent/InsideG/press/pressG040505.asp>]

A number of writers have noted that persons with disabilities tend to be more socially isolated than persons without disabilities, feel disconnected from their managers, experience decreased communication with peers and are isolated from the company culture. Employers also express concern that telework arrangements are not in keeping with the current emphasis on teamwork and the need for rapid change and response (Anderson et. al. 2001; Gibson et. el 2002; Igbraria and Guimares 1999). More recent in-depth studies have begun to call these into question, particularly as bandwidth to support more robust applications has become available. For instance a recent SUSTEL report⁶ found that many of the well-publicized negative aspects of telework, such as social isolation can be minimized with careful implementation strategies, and that Teleworking had for a significant minority led to greater involvement in community activities (p4).

A second contributing factor closely related to social interaction is job discrimination. According to studies, anywhere from 10% to 36% of employed persons with disabilities report having experienced job discrimination (NOD 2000; Kennedy and Olney 2001). Recent research suggests potential job discrimination also concerns teleworkers, especially from the standpoint of career development and promotions (Igbraria and Guimares 1999; Khaifa and Davidson 2000; Anderson et. al. 2001; Robertson et. al 2003), although overall employee acceptance of teleworking especially as n accommodation is increasing.

Liability is a third factor that may contribute to persons with disabilities not implementing telework arrangements. Ambiguities in the laws' terminology and application to home offices leave uncertainties regarding employers' liabilities in telework arrangements. The ADA forces a case-by-case, individual approach regarding litigation (Robertson et. al 2003; Kreismann and Palmer 2001). An individual legal claim can cost employers anywhere from \$50,000 to \$150,000 in attorney fees, even if the court dismisses the claim (USCCR 2003).

Remote access to technology is a fourth factor. In order to telework, an employee must have ready and consistent access to the technological infrastructure that enables telework arrangements: the Internet, email, wireless communications devices, facsimile and voice communication. "Virtual teams cannot exist without technology" (Pratt et. al 2000). Only 25% of persons with disabilities own a computer and just 20% have Internet access, compared to 66% and 40% of persons without disabilities respectively (Kaye 2000). As noted above the NFI recognizes this and has made it a key focal point of policy initiatives.

3.0 EU Policies on Disabilities and Telework

3.1 Background - Council Directive of 27 November 2000⁷

The EU views disabilities and employment on the basis of equal treatment for all, within accordance with Article 6 of the Treaty on European Union, whereas the European Union is founded on the principles of liberty, democracy, respect for human rights and fundamental freedoms. This treaty also includes among its objectives the promotion of coordination between employment policies of the Member States. In that light, this 2000 directive of the European Commission was designed as a general framework for equal treatment in employment and occupation, just as the EU framework agreement in 2002 on telework⁸ stated that "teleworkers benefit from the same rights, guaranteed by applicable legislation and collective agreements, as comparable workers at the employers premises".

In the area of the employment rights of the disabled, this 2000 directive focuses on the concept of discrimination and the right to reasonable accommodation.

3.1.1 Concept of discrimination

The 'principle of equal treatment' is defined by this directive to mean that there shall be no direct or indirect discrimination "on the grounds of religion or belief, disability, age or sexual orientation as

⁶ SUSTEL Consortium (D18, EU project IST-2001-33228), and the UK Centre for Economic and Environmental Development. [www.sustel.org]

⁷ COUNCIL DIRECTIVE 2000/78/EC of 27 November 2000

⁸ 16 July 2002, Cross-industry agreement on telework:

[http://europa.eu.int/comm/employment_social/news/2002/oct/teleworking_agreement_en.pdf]

regards employment and occupation”³. It specifically states in Article 2, paragraph 2 (ii) that “as regards persons with a particular disability, the employer or any person or organisation to whom this Directive applies, is obliged, under national legislation, to take appropriate measures in line with the principles contained in Article 5 in order to eliminate disadvantages entailed by such provision, criterion or practice.”

3.1.2. Reasonable accommodation for disabled persons

Article 5 of this same directive states that employers “shall take appropriate measures, where needed in a particular case, to enable a person with a disability to have access to, participate in, or advance in employment, or to undergo training, unless such measures would impose a disproportionate burden on the employer”³. The additional focus on Article 5 is on employers being assisted by measures, such as telework, that exist within the framework of the disability policy.

3.2 Council Resolution in Feb 2003⁹

From the directive in 2000, the focus of EU policy shifted more towards knowledge workers and accessibility for all, based on the evolution of the economic conditions towards a knowledge society. This resolution focused on technical/standards, persuasive, educational and informative policy instruments.

3.2.1 Persuasive instruments for policy making

Three main types of measures were used to aim at improving accessibility at the European level: human rights policy, social inclusion policy and support for R&D and standardisation actions (Commission of the European Communities 2002).

From the human rights policy perspective, eAccessibility can be seen as an extension of general accessibility measures and activities for disabled people. Policy measures have included the designation of 2003 as the year of People with Disabilities¹⁰. A key policy document in the frame of general accessibility is a Communication from the Commission entitled: “Towards a Barrier Free Europe for people with Disabilities”¹¹

Social Inclusion National Action Plans (NAPs) were begun in 2001 (and revised every two years thereafter) where initiatives towards social inclusion of the disabled are addressed at the national level and benchmarked against European guidelines following the model of the Employment NAPs (where measures for disabled persons in work are handled) (Commission of the European Communities 2002).

In R&D, eAccessibility has been addressed in the TIDE Initiative and in the both the Fourth and Fifth Framework Programs for Research and Technical Development (5FP) (Commission of the European Communities 2002). A Commission mandate on ICT standardization and people with disabilities and older people has been issued to the standardization organisations CEN, CENELEC and ETSI. These organisations run over twenty projects relating to eAccessibility with funding from the European Commission (Commission of the European Communities 2002).

3.3 Overview of the European Action Plan of Nov 2003 – Equal Opportunities for people with disabilities¹²

The EU believes that society now recognises the legitimate demands of the disabled for equal rights and that participation in society relates directly to insertion into society. Contributing to shaping society

⁹ COUNCIL RESOLUTION (2003/C 39/03) on 6 February 2003

¹⁰ Council Decision 2001/903/EC of 3rd December 2001

¹¹ COM(2000) 284 final of 12.05.2000

¹² COM(2003) 650 final of 30.10.2003

in a fully inclusive way is therefore the overall EU objective⁷ and the EU uses an integrated approach which makes use of a mix of policy instruments. In the context of the current economic climate, the EU is keenly committed to making use of voluntary cooperation methods for participation of all stakeholders: Member States, social partners, civil society, etc. To quote from the EU Disability Action Plan: “*This is notably the case of the open method of coordination in the areas of employment, social inclusion and lifelong learning, which are crucial to people with disabilities and where common objectives can be translated into national policies and good practices spread*”⁷.

3.3.1. Phase One – 2004/2005

As the EU felt that employment was still the most critical factor for social inclusion, the first phase of implementation of the EU Disability Action Plan focuses on creating the conditions necessary to promote the employment of people with disabilities, while making the mainstream labour market more accessible to them across the enlarged Union of 25 countries.

Figures consolidated by the European Community Household Panel survey (Eurostat 2001). on the basis of self-declaration of disability appear to be quite consistent over the years. They show that 14.5 percent of the EU's working-age population (i.e. aged between 16 and 64) report some form of disability (Eurostat 2001). This means that almost 15 percent of women (aged 16-64) and 14 percent of men (aged 16-64) report either a moderate or severe disability. For 14 Member States¹³, this amounts to approximately 26 million people of working age. In the 10 Candidate Countries¹⁴, it is reported that 25 percent of the population experiences some form of disability. This data demonstrate that in the EU people with disabilities are not a minority and to the EU the issue of inclusion is an issue of concern to the greater society and which requires society's contribution.

3.3.2. Follow-up through 2010

The EU Disability Action plan¹⁵ is a rolling multi-annual Action Plan with the time horizon of 2010. The goal of this Action Plan is to emphasize disability issues into relevant Community policies and develop concrete actions in crucial areas to enhance the integration in society of people with disabilities. Instruments to support these disability issues in key EU policies include a Commission biennial report on the overall situation of people with disabilities in the enlarged EU, with any new developments in the Member States. The EU will also reinforce the involvement of stakeholders and key players in the policy making to establish lasting socio-economic changes.

4.0 US Policies on Teleworking to Increase Employment for People with Disabilities

Telework has been increasingly promoted by the U.S. Federal Government in recent years, especially in the context of achieving increased employment opportunities for people with disabilities. Some research has been conducted to provide overviews of the issue, but governmental programs on a federal level are still at pilot stages.¹⁶

The Whitehouse's *New Freedom Initiative* (NFI) directs that activities be undertaken to promote the expansion of telework options (Whitehouse 2004). In a 2002 appropriation the U.S. Congress expressed its intent to set up a program focusing on telework to “include in these pilots all appropriate positions, whether the work is performed in-house, contracted, or outsourced in the types of jobs

¹³ (no data available for Sweden)

¹⁴ Candidate Countries Eurobarometer 2002.1: the social situation in countries applying for European Union membership (page 127).

¹⁵ COM(2003) 650 final

¹⁶ See: United States General Accounting Office (GAO). (2004) “Human Capital: Key Practices to Increasing Federal Telework.” Testimony Before the House Committee on Government Reform, House of Representatives. July 8, 2004. Online at: www.gao.gov/cgi-bin/getrpt?GAO-04-950T.; GAO. (2004) “Human Capital: Opportunities to Improve Federal Continuity Planning Guidance.” Report to the Chairman, Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Governmental Affairs, U.S. Senate. April 2004. Online at: [www.gao.gov/cgi-bin/getrpt?GAO-04-384]; and United States Office of Personnel Management. (2004) *The Status of Telework in the Federal Government. Report to Congress.*[http://www.telework.gov/documents/tw_rpt04/].

which can be performed from home, such as customer service/call contact centers, and claims, loan or financial transaction processing operations.” [H. Conf. Rep. No. 107–342, 107th Cong., 1st Sess. (2001)]. Integral to the pilots were tailored/individualized training, appropriate technology, and supportive mechanisms (e.g., reasonable accommodations, job coaching, mentoring, customized employment, etc.). Further, House Conference Report No. 108– 401, 108th Congress, 1st Session (2003), demonstrates Congressional intent to continue pilot research projects focusing on telework for people with disabilities, including funds within the Department of Labor’s (DOL) Office of Disability Employment Policy (ODEP) to continue the pilot project telework efforts, noting that priority should be given to strategies judged likely to yield the largest number of telework positions for people with disabilities.” (House Conference Report, p. 731).

Much of the legislative and policy efforts, even within the disability context, seem focused on reducing costs, rather than on increased civil rights of people with disabilities. For instance, on January 9, 2004, President George W. Bush announced the Safety, Health and Return-to-Employment (SHARE) Initiative directing Federal agencies to establish goals and track performance in four major areas: lowering workplace injury and illness case rates, lowering lost-time injury and illness case rates, timely reporting of injuries and illnesses and reducing lost days resulting from work injuries and illnesses. Because telework/ telecommuting can provide a viable alternative for Federal and State employees to return to work, exploring ways and strategies to use telework/ telecommuting as an option to accelerate the return to employment of Federal and State employees on workers’ compensation through this pilot research project will support the SHARE Initiative.¹⁷

DOL notes in a recent solicitation for consultants to help documents these issues that there is a “lack of comprehensive and credible information reflecting attributes hindering and supporting the implementation of telework in public and private work settings; and a general lack of national surveys dealing with quantitative aspects of telework for people with disabilities.” This program is designed to help identify the perceived risks and benefits of telework along with the obstacles and difficulties in implementation of related policy, including insights of what it takes to promote telework-related policy objectives in cultures of work organizations. Finally, this effort is expected to yield an authoritative report along with a tool kit that could be used by public and private organizations alike. (DOL 2004).

Other policy initiatives while not *directly* linked to Telework, can help contribute to an improved information access in virtual workspaces. For instance In August 2002, a cross-agency portal Disabilityinfo.gov was launched to make disability information easily accessible to all Americans. DisabilityInfo.gov streamlines access to information about Federally-sponsored employment, housing, job accommodations, transportation, income support, health care, state and regional assistance programs, technology, emergency preparedness, and other programs relevant to the daily lives of people with disabilities. Additionally, Section 508 of the Rehabilitation Act, requires that all electronic and information technology purchased, maintained, or used by the Federal government be readily accessible to and usable by individuals with disabilities. Section 508 seeks to harness the purchasing power of the Federal government to promote greater accessibility of all electronic and information technology. The Administration has taken a number of steps to ensure compliance with Section 508, and although the law’s requirements apply only to the Federal government, initiatives are also being undertaken to promote better accessibility in the private sector and throughout state and local governments.

5.0 Philosophy Comparison / Policy Innovations

Technological advances such as the diffusion and adoption of ICTs can have significant social consequences, some of which are anticipated, while others are unexpected. The deployment of these technologies can be uneven and are influenced by the local (or national) political, cultural, and economic contexts, and the degree of access to enabling technologies subject to a wide array of policy and regulatory responses reflective of fundamental philosophical assumptions.

The institutional approaches to Telework, particularly as offering opportunities to people with disabilities differ in the U.S. and the E.U., and to some degree, reflect a an understanding of disability as being a matter of civil rights (U.S.) or more broadly *human rights* (E.U.). Alternatively, it can be said that the U.S. focus on the use of markets, and market-based policy instruments to achieve

¹⁷ [<http://www.dolesa.gov/share.>]

objectives. While legislation such as the ADA in the U.S. does mandate certain actions based on the status of individual (for instance Title 1 requires reasonable accommodations, and Title 3 requires that public accommodations be accessible), more common approaches are one that create incentives rather than requirements. An example of this is the requirement of Sec. 508 of the Rehabilitation Act Amendments, as amended by the Workforce Investment Act of 1998. Section 508 requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they shall ensure that the electronic and information technology allows Federal employees with disabilities to have comparable access to and use of information and data. This also applies to vendors and contractors thus create an incentive to make information and technology accessible.

This is in contrast to the EU approach which provides council resolutions, directives and action plans, all designed as policy instruments to promote these concepts, but not provide the same financial incentives by these vehicles as the U.S. does by Sec. 508 as described above. The mainstreaming strategy of eAccessibility and the EU Disabilities Action Plan both emphasize the integration of the disability perspective into every stage of policy processes – from design and implementation to monitoring and evaluation – with a view to promoting equal opportunities for people with disabilities.

While joint or international efforts are being explored, further efforts in these areas can be expected to yield synergistic results.¹⁸

6.0 Conclusions

If an emphasis on e-accessibility (EU) or E-government (US) facilitates teleworking, and more broadly virtual workspaces, what policy responses might be reasonable on a social basis? In the U.S. the ADA states that employers must make ‘reasonable accommodation’ for persons with disabilities unless such results in undue hardship to the employer (Blanck et. al. 2003). In addition, the EEOC and the *New Freedom Initiative* not only recognize telework as a potential alternative work arrangement for persons with disabilities, but direct the implementation of pilot projects to achieve greater use of Telework (Anderson et. al 2003). A variety of policy responses are possible depending on the political and cultural contexts involved. As noted above the U.S. and the E.U. have different though complimentary philosophical understandings as to the role and approaches used to promote social objectives. These range from direct actions on the part of governments designed to drive the adoption and use of ICTs, to directives or regulation that require a given course of action by other stakeholders; to provision of monetary incentives (grants or tax credits) for unemployed persons with disabilities who become employed and implement telework arrangements, to the use of research, and information and educational programs to increase awareness of targeted conditions of inequity. This latter policy approach would seek to further educate persons with disabilities and employers through high profile outreach programs about the employment of persons with disabilities and telework arrangements as a work alternative for persons with disabilities. These efforts could include for instance the use of websites, listservs, and other communication technologies to facilitate online virtual communities to help provide “virtual space” in which remote teleworkers could develop some sense of membership in a work community. While this cannot replace the interaction of face to face communication, it can help give teleworkers a sense of “being in the loop.”

This type of communication campaign provides an avenue for facilitated discourse between vested stakeholders that will not interfere with each stakeholders’ other priorities, keeps telework and the employment of persons with disabilities on the agenda and allows the synergy between the two issues to progress along the timeline of the stakeholders.

Finally, in order to help support the case of increased emphasis on e-accessibility and telework, additional national efforts need to be made to encourage the progress of research in a number of related areas (Wireless RERC 2003), beyond the research efforts proposed in the 2001 *New Freedom Initiative*. Raising awareness of the issue will likely encourage research of teleworkers with disabilities and on the role of computer mediated virtual workspaces as both reasonable accommodations and more efficient venues for collaborative activities. However, a targeted set of programs would reflect a renewed emphasis on leveraging information technologies to reduce insidious aspects of the digital divide. Currently, claims and assumptions regarding teleworkers with

¹⁸ See for instance: “Access of People with Disabilities to Employment EU-US Seminar” Brussels, 17-18 November 2003. [http://www.socialdialogue.net/en/en_lib_163.htm]

disabilities are created by overlaying research on teleworking and research on employees with disabilities. Without research specific to teleworkers with disabilities, the assumptions and claims made regarding teleworkers and, more specifically, persons with disabilities, will continue to encourage speculations interfering with telework as a viable reasonable accommodation that can increase the employment of persons with disabilities.

In the European context, the Directive 2000/78/EC of 27 November 2000 is designed to challenge the misconception that disability is equal to inability or lack of ability, and should contribute towards removing discrimination based on ignorance which surrounds disability. Actions for this integration are funded by the European Social Fund mainstream programs and the Community initiative EQUAL, the two main financial tools through which the Community translates into action its aims as regards employment of people with disabilities. In the framework of EQUAL's thematic activities, five European Thematic Groups corresponding to its horizontal priorities have been created: Employability, Entrepreneurship, Adaptability, Equal Opportunities and Asylum Seekers. A particular focus has been given by the Employability Thematic Group which has created a Working Group on Disability¹⁹.

However, the EU is reliant on partnerships and Member States to implement policy and actions to make mainstreaming a reality. Motivation of partners is a key element of success in both raising awareness and education of employers and firms manufacturing/ designing telework tools for access for all.

Acknowledgements:

These research is partially supported by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education under grants number H133E010804 and Grant H133E020720. The opinions contained in this publication are those of the grantee and do not necessarily reflect those of the U.S. Department of Education. The authors wish to acknowledge the research assistance of Andrew C. Ward, Alan Bakowski, Clair Krizov, Lynzee Head, and Yafit Azran.

References

Anderson, Jane, Bricout, John C. and West, Michael D. (2001). Telecommuting: Meeting the Needs of Businesses and Employees with Disabilities. *Journal of Vocational Rehabilitation*, 16, 97-104.

Baker, Paul M.A., and Andrew C. Ward. 2002. "Bridging Temporal and Spatial "Gaps": The Role of Information and Communication Technologies in Defining Communities." *Information Communication and Society*. Vol. 5 (2) 207-224.

Blanck, P.D., L. Schur, D. Kruse, S. Schwochau, and C. Song (2003). "Calibrating the Impact of the ADA's Employment Provisions." *Stanford Law and Policy Review*. Vol. 14, No. 2: 267-290.

Commission of the European Communities (2002) Delivering eAccessibility - Improving Disabled People's Access to the Knowledge Based Society, Commission Staff Working Paper SEC(2002) 1039.

EEOC-Equal Employment Opportunity Commission (2003). "Work at Home/Telework as a Reasonable Accommodation." Equal Employment Opportunity Commission Web site. [<http://www.eeoc.gov/facts/telework.htm>]. Printed from Web September 12, 2003.

ETO (2000) "How many teleworkers?" European Telework Organization, [<http://www.eto.org.uk/faq/faq-numb.htm>]

Eurostat (2001). "Disability and social participation in Europe", European Commission, Eurostat, theme 3 "Population and social conditions", ISBN 92-894-1577-0.

Fairweather, N. Ben (1999). "Surveillance in Employment: The Case of Teleworking." *Journal of Business Ethics*: 22, 39-49.

¹⁹ COM(2003) 650 final

Gareis, K. (2002). "The Intensity of Telework in 2002 in the EU, Switzerland and the USA", found at: [http://www.empirica.biz/sibis/files/badajoz\(gareis\).pdf](http://www.empirica.biz/sibis/files/badajoz(gareis).pdf)

Gibson, Jane Whitney, Blackwell, Charles W., Dominicis, Peter and Demerath, Nichole (2002). "Telecommuting in the 21st Century: Benefits, Issues and a Leadership Model which Will Work." *The Journal of Leadership Studies* (Spring): 8(4), 75-86.

Igbraria, M. and Guimares, T. (1999). "Exploring Differences in Employee Turnover Intentions and Its Determinants among Telecommuters and Non-Telecommuters." *Journal of Management Information Systems*: 16, 147-164.

Kaye, H.S. (2000). "Computer and Internet Use Among People with Disabilities." *Disabilities Statistics Report* (13). Washington D.C. U.S. Department of Education, National Institute on Disability and Rehabilitation Research.

Kennedy, Jane and Olney, Marjorie (2001). "Job Discrimination in the Post-ADA Era: Estimates from the 1994 and 1995 National Health Interview Surveys." *Rehabilitation Counseling Bulletin* (Fall): 45(1), 24-30.

Khaifa, Mohamed and Davidson, Robert (2000). "Exploring the Telecommuting Paradox." *Association for Computing Machinery—Communications of the ACM* (March): 43(3), 29-31.

Kreismann, Ronald and Palmer, Richard (2001). "Reasonable Accommodation under the ADA: What's an employer to Do?" *Cornell Hotel and Restaurant Administration Quarterly* (October-November): 42(5), 24-33.

Mills, Juline E., Wong-Ellison, Chilian, Werner, William and Clay, Joan M. (2001). "Employer Liability for Telecommuting Employees." *Cornell Hotel and Restaurant Administration Quarterly* (October/November): 42(5), 48-59.

NOD/Harris Poll-National Organization on Disability/Harris Poll (2000). *Employment Facts about People with Disabilities in the United States*. Retrieved October 12, 2003, <http://www.nod.org/content.cfm?id=14>

Office for National Statistics, United Kingdom (ONS) (2001), *The Labour Force Survey User Guide*, Vol 1-9, London.

Olson, Deborah, Cioffi, Andrea, Yovanoff, Paul and Mank, David (2001). "Employers' Perceptions of Employees with Mental Retardation." *Journal of Vocational Rehabilitation*: 16, 125-133.

Pratt, Joanne H. and Associates (2000). "Telework and Society-Implications for Corporate and Societal Cultures." U.S. Department of Labor Web site. http://www.dol.gov/asp/telework/p3_3.htm Printed from Web October 10, 2003.

Raines, J. Patrick and Charles G. Leathers (2001). "Telecommuting: The New wave of Workplace Technology Will Create a Flood of Change in Social Institutions." *Journal of Economic Issues* (June): 35(2), 307-313.

Robertson, Michelle M., Maynard, Wayne S. and McDevitt, Jamie R. (2003). "Telecommuting: Managing the Safety of Workers in Home Office Environments." *Professional Safety* (April): 30-36.

Swink, Dawn R. (2001). "Telecommuter Law: A New Frontier in Legal Liability." *American Business Law Journal* (Summer): 38(4), 857-900.

Tahmincioglu, Eve (2003). "By Telecommuting, the Disabled Get a Key to the Office, and a Job." *New York Times* (July 20).

U.S. DOL-U.S. Department of Labor (2003). "Days Teleworking per Week." http://www.dol.gov/asp/telework/telework_tables.htm Printed from Web September 27, 2003.

USCCR-U.S. Commission on Civil Rights (2003). "Sharing the Dream: Is the ADA Accommodating All?" The USCCR Web site. <<http://www.yusCCR.gov/pubs/ada>> Printed August 28, 2003.

U.S. Census Bureau (2000). *Summary File 3, Table P42, PCT 26, PCT 34*. Retrieved September 26, 2003, [<http://www.census.gov>]

U.S. Department of Labor (DOL), Office of Disability Employment Policy [SGA 04-12] "Telework/Telecommuting Pilot Research Solicitation for Cooperative Agreements". *Federal Register*, v.69 (#130), July 8, 2004, p41283.

Ward, Andrew C., and Paul M.A. Baker. 2005. "Disabilities and Impairments: Strategies for Workplace Integration." *Behavioral Sciences & the Law*, 23(1):143-60.

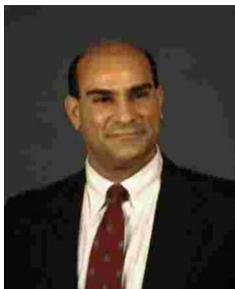
Whitehouse. 2004. *The President's New Freedom Initiative for People with Disabilities: The 2004 Progress Report*, March, 2004. [<http://www.whitehouse.gov/infocus/newfreedom/newfreedom-report-2004.pdf>].

Wireless RERC. (2003) *Policy and Regulatory Assessment: Factors Influencing Adoption of Wireless Technologies: Key Issues, Barriers and Opportunities for People with Disabilities*. Atlanta, GA: Wireless RERC. [<http://www.wirelessrerc.org/news/policyassessment.html>].

Worksupport.com (2000, June). *Tapping New Talent for Business Success: Employing People with Disabilities*. VCU-RRTC on Workplace Supports. Retrieved September 26, 2003, [<http://www.worksupport.com/Topics/downloads/tappingtalent-2.pdf>].

Bios

Paul M.A. Baker, Ph.D., AICP, is the Associate Director of Policy Research with GCATT/Georgia Institute of Technology, and a Project Director for both the Wireless and Workplace Accommodations Rehabilitation Engineering Research Centers (RERC). Baker is currently researching the role of policy in advancing technology and universal accessibility goals for persons with disabilities; and institutional issues involved in public sector information policy development and state and local government use of information and communication technologies.



Alea Fairchild, Ph.D., is Assistant Professor in Management and Computer Science at Vesalius College, Vrije Universiteit Brussel. Her areas of interest are transaction cost economics, value networks and innovation management. She received her PhD in Applied Economics from Limburgs Universitair Centrum, Diepenbeek, Belgium. Her latest book, 'Technological Aspects of Virtual Organisations,' was published by Kluwer in August 2004.



